

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

FEBRUARY 1982/\$2.50

FOREIGN \$3.00



T-N-99/99-0001-000MEMBER-999
0020732 RYAN
RODERICK KODAK
EASTMAN KODAK
6706 SANTA MONICA BLVD
HOLLYWOOD CA 90038

“HEARTBEEPS”... AND HOW IT WAS FILMED

WE'RE VIDEO CITY AGAIN!

TV Returns to New York

In the mid 1950's major television production relocated to the west coast (and we felt it). Today, however, more and more producers and directors are feeling that the New York atmosphere is essential to the success of their product . . . and television is coming home!

One of the reasons it's going to *stay* home is **CSC Video**, New York's favorite source for TV production and broadcast equipment. It is a turn-key operation, designing entire systems down to individual pieces . . . and backing them up with complete service support for the end user.

CSC Video is the professional choice of a wide range of markets, including broadcasting, medical, industrial, electronic news gathering and electronic field production. In addition, **CSC's** consulting engineers are perfecting cable and pay-TV systems to meet the growing demand for individual programming.

TOP NAMES

You and your production crew can rely on **CSC** for rentals, sales and service featuring such respected names as Crosspoint Latch, Ikegami, Sony, Tektronix, Toshiba and many, many more.

CSC Video equips and services virtually all phases of television and cable production.

TV is completely at home with **CSC Video** in New York . . . and you will be too!



TV's Production Equipment Source

Write or call for information.

Camera Service Center, Inc. • 625 West 54th Street • New York 10019 • (212) 757-0906

IF THINGS ALWAYS WENT RIGHT,
WE MIGHT NOT BE
WHERE WE ARE TODAY...



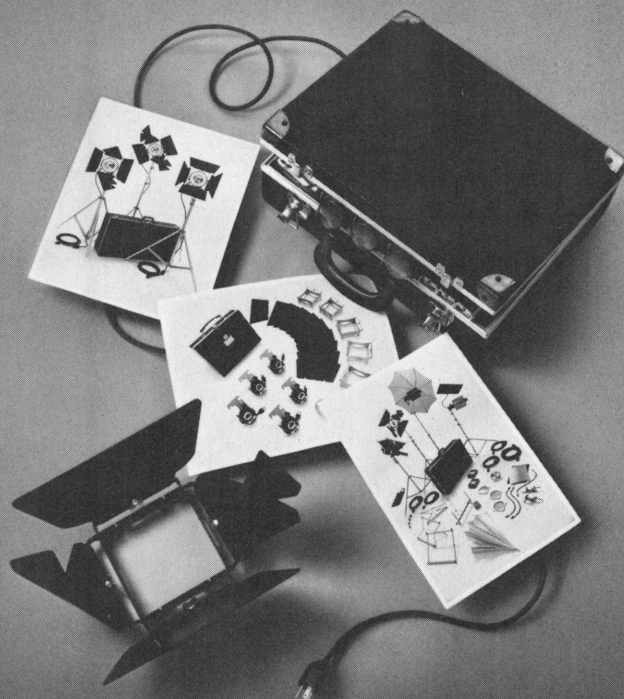
You can rent equipment from a lot of companies, but you can't rent our experience from anyone but us.

We built our company on service; and our reputation on being where you need us—when you need us.

**general
camera**
corporation **gc**

540 W. 36th Street
New York, N.Y. 10018
(212) 594-8700

How to get the kit without the caboodle.



The last thing you need on location is equipment that won't be used. But what's useless to one professional is indispensable to another. That's why we have more than twenty kits. Some are stripped for fast action. Others have an assortment of control and mounting components to provide finesse, without fuss. A few are so well equipped, you can tackle those formidable locations, lightheartedly. And if none are exactly right—we'll help you create your own kit.

Minus the caboodle. And minus the caboose.

For equipment and kits see an authorized Lowel dealer. For brochures contact us. Lowel-Light Manufacturing, Inc., 421 West 54 Street, New York, N.Y. 10019. (212) 245-6744 Telex—666597L W. Cable—Lowelight. West coast—3407 West Olive Ave., Burbank, California 91505. (213) 846-7740.

lowel  [®]

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

Herb A. Lightman
editor

Richard Patterson
video editor

Lyla Dusing
editorial assistant

Barry Day
production control

Jean Turner
advertising

Patty Armacost
circulation

Barbara Prevedel
accounting

Gabrielle de Ganges
layout assembly

Contributing Editors
David Samuelson
Sidney P. Solow
Anton Wilson

Book Review Editor
George L. George

Editorial Advisory Committee
Milton Krasner, Chairman
Stanley Cortez
Linwood Dunn
George Folsey
Ernest Laszlo
Sam Leavitt
Gene Polito
Lester Shorr
Harry Wolf
Ralph Woolsey

Executive Director
Al Keller

FEBRUARY 1982

VOL. 63, NO. 2

● FEATURE ARTICLES

- 122 "HEARTBEEPS" . . . And How It Was Filmed
- 124 Behind the Camera on "HEARTBEEPS"
- 128 A Movie Robot is Born
- 132 The EMMY Award-winning Photography of "LITTLE LORD FAUNTLEROY"
- 136 The Tiffen Story
- 143 The Need for Shooting Flexibility
- 149 Clothes Encounters of the Filming Kind
- 150 "CHALLENGER"—Anatomy of an Award-winning Documentary
- 158 The American Society of Cinematographers Mourns the Passing of Karl Struss, ASC
- 176 New York's New Studio Complex for Film and Video Production

● DEPARTMENTS

- 112 What's New
- 116 The Bookshelf
- 120 Cinema Workshop
- 140 Talking Technically
- 147 Questions & Answers
- 160 Industry Activities

ON THE COVER: Stars of the Universal film "HEARTBEEPS" gather in a holiday mood for a family portrait. Included are ValCom-17485 (Andy Kaufman), AquaCom-89045 (Bernadette Peters) and their baby robot, Phil. Sitting in is CatSkil, a crazy uncle who specializes in corny one-line jokes. The robot romance was produced by Michael Phillips, directed by Allan Arkush and photographed by Charles Rosher, Jr., ASC.

**Editorial—Advertising—
Business Offices**
1782 North Orange Drive
Hollywood, Calif. 90028
(213) 876-5080

Send mail to
P.O. Box 2230
Hollywood, CA 90028

AMERICAN CINEMATOGRAPHER, (ISSN 0002-7928) established 1920, in 63rd year of publication is published monthly in Hollywood by ASC Holding Corp., P.O. Box 2230, Hollywood, California 90028, U.S.A. **SUBSCRIPTIONS:** U.S. \$20.00; Canada/Mexico \$25.00; all other foreign countries \$30.00 a year (remit International Money Order or other exchange payable in U.S.). **ADVERTISING:** rate card on request to Hollywood office. Copyright 1982 ASC Holding Corp. Second-class postage paid at Los Angeles, California and at additional mailing offices. Olive Branch, MS. **POSTMASTER:** send form 3579, with change of address to, ASC Holding Corp., P.O. Box 2230, Hollywood, CA 90028.

AMERICAN CINEMATOGRAPHER, FEBRUARY, 1982

Why is Aäton alone?

Super 16 is getting a lot of publicity* these days. The reasons are many, the first being simply the 40% increase of usable image dimensions for 35 mm blow up. That, plus high definition TV (in 1 : 1.66 format ratio, 1200 horizontal lines) is one of the principal motivations of going from 16 to Super 16. People are going from 35 to Super 16 as well. The reason is economics : not just the raw stock, but running expenses, cost of equipment purchase or rental.

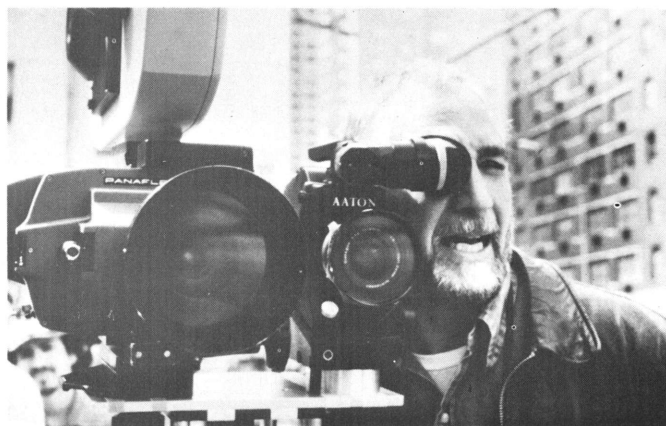
But why is the Aäton 7LTR alone in being chosen for Super 16 applications? Why do discerning filmmakers prefer the Aäton to other 16 mm cameras when it comes to blow-up?



The answer is image quality.

The Aäton 7LTR is the only 16 mm camera originally designed with both Super 16 and standard 16. This doesn't mean just an interchangeable aperture plate with a wider gate : any camera manufacturer can do that. It means *optimum image steadiness : vertically, horizontally and in depth.*

Vertical steadiness is ensured by various means : some cameras have registration pins... With its absolutely linear claw movement, the Aäton LTR positive claw provides vertical steadiness in the range of 1/2000th of image dimensions.



Bob Young chose the best equipment available for the film he directed in order to study the relative merits of Super 16 and 35 mm. The results — very favorable for Super 16 — can be seen at Du Art Laboratories in New York. (Photo : Diane Young.)

The Aäton meets the same tolerances for **horizontal steadiness**, because the film is positioned laterally with micron accuracy at the gate. Some other cameras have no lateral positioning system whatsoever at the gate... and the projected images weave from left to right.

In-depth steadiness is obtained by maintaining the film firmly in the same plane at all times : this is easy in the LTR, because the film loop is long and flat, and the rear image pressure plate spring loaded so as to keep the film in place firmly. Such a system obviously provides better steadiness than one in which the film «floats» over the aperture.

With the progress of lenses and film stocks, with the promise of high definition TV to come, Super 16 has an enormous potential.

Film-makers : think about Super 16, the standard for 16 mm film. **Be demanding** : ask for more than just a bigger aperture.

Camera manufacturers : join us.

Super 16 is the future of the 16 mm film medium.

Aäton alone

1697 Broadway
New York, NY 10019
Tel. (212) 541-8181

* Articles in the American Cinematographer, Sept. and Nov. 1981 by Irwin Young & Rune Ericson respectively, in Eyepiece (London) by David Samuelson : papers presented at SMPTE 1980 Technical Conference by Irwin Young, and at Film'81 in London.

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE

HIGHLY PORTABLE SONY SINGLE-UNIT VIDEO CAMERA/VTR

The development of a highly portable, single-unit video camera/half-inch VTR for broadcast use has been announced by the Broadcast Division of Sony Video Products Company.

Called the BVW-1, "VTR-In-Camera," the unit weighs approximately 15 pounds including lens and battery. It is a revolutionary new video system that greatly enhances the mobility and maneuverability of electronic news gathering (ENG) by integrating a video camera and videotape recorder into one portable unit that delivers excellent picture quality. The system is made possible by a new component, high density video recording format.

While revolutionary in concept, the BVW-1 has system compatibility with any U-matic or one-inch videotape recording system now used in broadcast operations. This guarantees continued usage of existing U-matic and one-inch VTRs and editing systems. It supports Sony's commitment to developing products that will enhance existing technology, not obsolete it.

When combined with the newly developed playback VTR, the "VTR-In-Camera" recording can be transferred for editing to either of these recording formats.

The "VTR-In-Camera" features a new high-band SMF Tricon single pickup tube with full NTSC band width capability. Its new half-inch VTR recording system utilizes an L-500 Beta videocassette that delivers 20 minutes of recording time.

Providing greater freedom of action, the BVW-1 eliminates the need for interconnect cables between the camera and videotape recorder. Current ENG-type news gathering equipment requires a separate video camera and videotape recorder which is less flexible than a one-piece unit.

Advanced technology in high density magnetic recording, precision mechanical technology and other technical innovations such as integrated circuit technology provide for over one hour of continuous recording time on a single battery. Sony anticipates marketing the BVW-1 in the spring of 1982.

BVW-1 Specifications:

Pickup tube: single-tube high band SMF

Tricon system (HBST)
Format: standard Beta videocassette (L-500)

Video recording format: new component video recording system

Recording time: 20 minutes per cassette

Continuous recording time: over one hour per battery

Weight: approximately 15 pounds (including lens and battery)

Size: 110 x 360 x 200 mm

*Tricon is a registered trademark of Sony Corporation.

NEW BOGEN CINE/VIDEO CAMERA SUPPORT SYSTEM

Now TV cinematographers, industrial and educational filmmakers can enjoy smooth, steady, shutter-free camera operation with the affordable Bogen Cine/Video Camera Support System.

Consisting of a lightweight, professional quality, fluid-damped tripod head, a choice of a remarkably stable, Universal Tripod, or a classic Heavy-Duty Tripod, and the Bogen Cine/Video Dolly, this system incorporates many exceptional features generally found only in support systems costing much more.

The Fluid Head is designed for cameras weighing up to 22 lbs (10 Kg.) and provides smooth 360° panning, upward tilting to 60°, downward tilting to 90°. It can be set, too, to lock the downward movement at 45° and offers simple adjustment for panning drag, as well as vertical drag.

The Universal Tripod weighs less than 12 lbs. yet extends to 66 inches. With lower legs made of steel and rigid center brace construction, it offers remarkable stability. The classic field tripod extends to a full 63 inches and can be set as low as 12 inches.

To complement the other high quality components of this system, the Bogen Cine/Video Dolly is available. It features individually braked wheels measuring 5 inches in diameter and a unique leg locking system which makes it simple to assemble and disassemble for travelling.

For complete information on the Cine/Video Camera Support System, contact: Bogen Photo Corp., 100 So. Van Brunt St., P.O. Box 448, Englewood, NJ 07631.

SUPER8 SOUND PULSE CONVERTER

The Super8 Sound Pulse Converter is a sync interface device which produces a professional, pilotone, sync signal from any super-8 camera having a 1/F (flash) contact.

The resulting 50 or 60 Hz signal can be used for double-system sound recording with a Nagra IV.2, S8S XSDIV, or other professional sync recorders. It is also possible to use a non-sync, stereo tape recorder by recording the signal onto one of its tracks. The Pulse Converter can be used with a super-8 sound projector as well, for pro-quality mixing capabilities.

Power is supplied by a standard, 9V alkaline cell, providing at least 70 hours of continuous operation. The unit contains an internal 50/60 Hz switch for use worldwide.

SPECIFICATIONS:

Power: 9V DC

Sync Input: Produces square wave 24 or 18 fps pulse when cabled to a 1/F switch closure.

Sync Output: 60 Hz sine wave at 24 fps; 45 Hz at 18 fps.

Voltage Output: 1 mv with mic attenuating cable (supplied) 1.v without attenuator

Dimensions: 10cm x 5cm x 4cm

The Super8 Sound Pulse Converter is available through dealers and distributors, or directly from Super8 Sound, Inc., 95 Harvey Street, Cambridge, MA 02140.

Price: \$180.00 postpaid. Camera Cable \$20.00 (specify type)

CINEMA PRODUCTS' CO-AX DIGITAL REMOTE CONTROL SYSTEM NOW AVAILABLE IN PAL-B

Cinema Products Corporation announces that its Co-Ax Digital Remote Control system is now available both in NTSC and PAL-B standards.

The CP Co-Ax Control system consists of a Mini-CCU, a Digital Encoder (standard 19" rack-mounted), and a camera-mounted Decoder. (The Digital Encoder is designed to accommodate two Mini-CCU's to control two separate cameras, each equipped with its own Decoder.) The new system eliminates the need for bulky and expensive multicore cable by using a single, lightweight, and relatively inexpensive *coaxial cable* (between the Digital Encoder and the camera-mounted Decoder) to provide reliable, studio-like remote control from distances of up to 5000 feet to ENG/EPF cameras in the field.

Continued on Page 197

LET THERE BE LIGHT

lighting that doesn't limit your creativity.

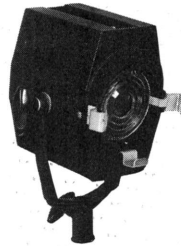
The best lighting directors and cinematographers for film or video agree that the old axiom "If one is good then two are better" doesn't necessarily hold true in lighting. You need the right light for the right job.

There are so many different lights and lighting manufacturers that picking that right light can sometimes be confusing. We don't want to add to your confusion, but here are a few new lights we think you should know about.



MINI COOL

A compact, lightweight fixture ideal for portable applications. Special design eliminates 90% of the radiant heat. Battery or AC powered.



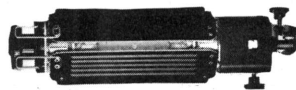
ULTRA MINI SPOT

Fresnel lens allows focusing with an even field. One of many economically priced units from Ultra Light.



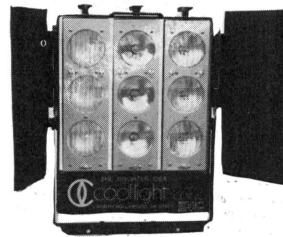
COLORTRAN MINI-PRO

Lightweight. Focusable. Rugged. Dependability and versatility has made this light the standard in news photography. Operable on battery or AC.



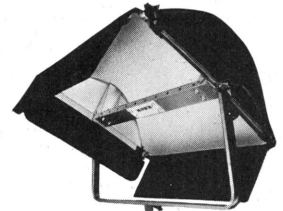
LOWEL TOTA-LIGHT

Exceptionally compact for storage. Extraordinarily wide angle yet efficient illumination. Multiple accessories make it extremely versatile.



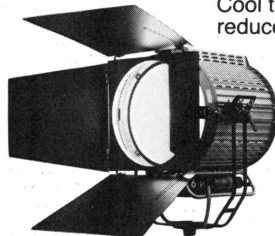
COOLLIGHT TRILITE

A nine light with 3 removable light banks each containing 3 lamps enabling the fixture to be attached in 3, 6 or 9 light configurations. Like the Mini Cool the Trilite substantially reduces radiant heat.



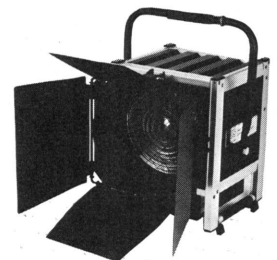
LOWEL SOFTLIGHT

Utilizes highly-reflective, heat-absorbant fabric reflector shell. Perfect for compact storage on location.



ARRIFLEX HMI

Provides 2½ times the illumination of tungsten units with the same power consumption. The perfect daylight booster source. Ribbed duraluminum construction makes the Arriflex HMI series extremely rugged. In addition to standard 575W, 1200W, 2500W and 4000W, a 200W battery powered HMI is also available.



CINEMA PRODUCTS RDS HMI

These HMI's are convertible to tungsten and are constructed for storage stacking. Both the 575W and 1200W draw less than 15 amps. An outstanding daylight source, economically priced.

The experts at ALAN GORDON ENTERPRISES, INC. are here to eliminate your confusion. We stock these lights and many more. Write or call us with your specific applications and we will do our best to make sure you get the right light for the right job . . . and then, *let there be light.*

alan gordon enterprises inc.



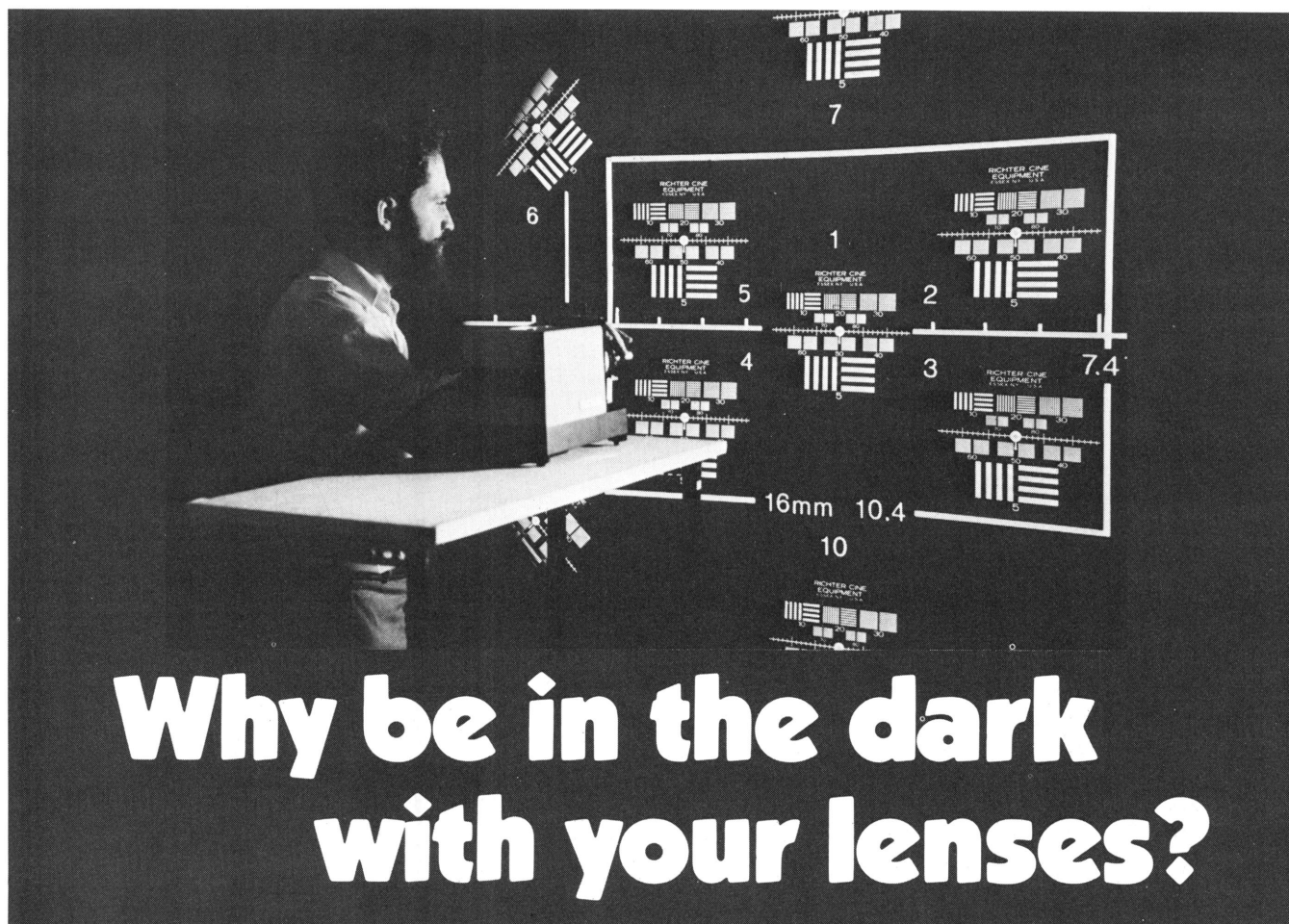
1430 Cahuenga Blvd., Hollywood, CA 90028

Address Correspondence to P.O. Box 315, Hollywood, CA 90028

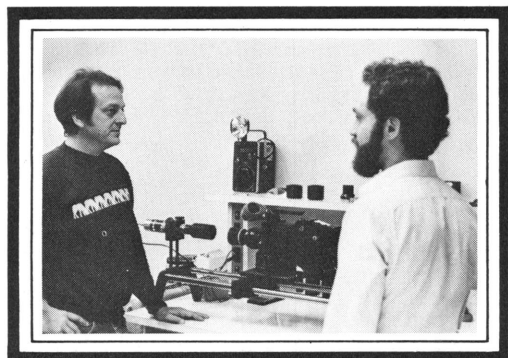
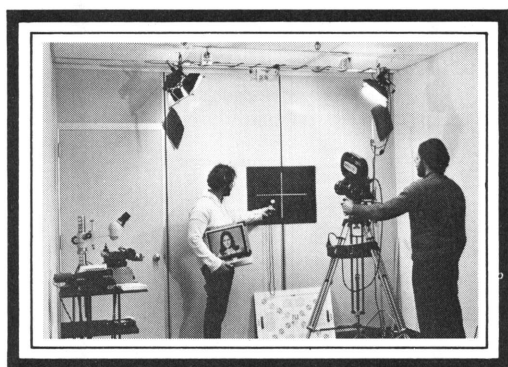
Telephone: (213) 466-3561 • (213) 985-5500

TWX: 910-321-4526 • Cable: GORDENT

COPYRIGHT © 1982
ALAN GORDON ENTERPRISES INC.



Why be in the dark with your lenses?



Du Art's *FREE Camera and Lens Evaluation Service* makes available to the cinematographer a **Lens Test Projector**. Coverage, resolution, and uncorrected aberration are instantly defined. No more inconclusive film tests—**what you see is what you get**.

What's more, our unique testing facility provides an auto collimator for detailed focal plane examination and lighting for focus and registration charts, (you supply the raw stock we will process free).

Call David Leitner at (212) PL7-4580 to set up an appointment for your camera and lens evaluation. He'll be happy to spend time with you analyzing the results.

Call or write for a free copy of our "CINEMATOGRAPHER'S LABORATORY GUIDE" explaining our camera and lens evaluation and other services for the cinematographer.

DU ART FILM LABORATORIES, INC.
245 West 55th Street, New York, N.Y. 10019 (212) PL7-4580



Think of us as your mike expert.



The lack of a consistent "station sound" is a problem many broadcast engineers wrestle to overcome every day. The simplest and often least expensive way of establishing and maintaining this station sound is the use of a professional-quality broadcast microphone.

The RE20, for example, is uniquely suited to eliminating the sonic variables caused by different announce mike techniques, voice-overs and interview setups.

"Single-D" microphones have proximity effect. The RE20 doesn't, and its unique

dual-tube Variable-D design not only assures uniform frequency response independent of working distance but also regardless of the talent's position within the cardioid pickup pattern.

The RE20 also eliminates the vocal inconsistencies often heard in post production when studio voice-overs are added to ENG tapes recorded in the field with omnidirectional mikes.

If a consistent "station sound" is your objective, a truly professional-quality microphone should be the first solution you should consider. See your Electro-Voice professional microphone dealer. He has the microphone you need.



Electro-Voice®
a gulton company

600 Cecil Street, Buchanan, Michigan 49107

In Canada:
Electro-Voice, Div. of Gulton Industries (Canada) Ltd.,
345 Herbert St., Gananoque, Ontario K7G 2V1.



Its a Ritz AV-Cine PRICE BLITZ

New Cameras & Accessories

Arriflex 16 SBGS	\$5,500.00
Cinema Products Cat 1C505	
16mm GSMO Body	5,500.00
Cinema Products Cat 1G500	
400' Magazine	1,800.00
Cinema Products Cat 1R500	
12x finder	950.00
CP GSMO w/2 400' Mags, 2 Batteries,	
2-Chargers, Pro grip, New "0" Finder,	
Large Alum. Case	12,500.00
CP GSMO As Above plus Angenieux	
9.5 to 57mm Zoom Lens	15,000.00
1G166 400' Mitchell Magazine	270.00
1L185 Mike Light Bracket	70.00
1DI Crystal Pistol Probe	300.00
Spectra Pro Meter	160.00
Spectra Pro II Meter	180.00
Spectra Viewing Glass	20.00
1G240 Pro Film Pouch	12.50
JK Animation Motor for Bolex EBM	475.00
Oxberry Media Pro w/Bolex SBM/	
16-100 Zoom Lens/Animation	
Motor Complete	6,500.00
339-394 Arri V.S. Controll	375.00
341-155 Arri Pistol Grips	50.00
339-336 Arri Zoom Motor/Zeiss	200.00
339-210 Arri 200' 16M Mag	400.00
339-220 Arri 200' 35mm Mag	400.00
339-001 Arri Matte Box	200.00

Used Cameras & Accessories

Bolex EBM w/16-100 Auto Lens	\$2,000.00
Auricon Crystal Conversions	395.00
B&H 70 TMR Body	95.00
B&H 70 DL Body	95.00
B&H 70 DR Body	275.00
Eclair ACL w/CP XTAL Motor,	
2 400' French Mag & Case	6,500.00
Arri 16mm Fibreglass Blimp	500.00
Arri 16mm Metal Blimp	195.00
Arri 35II B, VS Motor, Case	1,450.00
Arri 35II A, VS Motor, Case	990.00
CP 16A w/Head and Case	950.00
Arriflex 16S Body	1,700.00
Arriflex BL w/12-120 Lens, 400'	
Magazine Carrying Case	8,400.00
CP Studio Rig	1,100.00
Bolex MST Motor	200.00
Beaulieu R16B Body	300.00
Beaulieu R16B w/12-120 Angenieux	900.00

New Lenses

Data Rings for Most Angenieux Lenses \$	35.00
Angenieux 10 to 150 CPR MT IN319	3,800.00
Angenieux 1.5x Tele Attachment	1,500.00
Angenieux 9.5 to 57 CPR MT IN317	3,700.00
Angenieux 16 to 44 CPR MT IN322	3,500.00
Century 3.5mm CPR MT	550.00
Angenieux 28mm T1.2 CPR MT	1,000.00
Arri 75mm Cinegon f2.2	395.00
Arri 100mm Cinegon f2.2	495.00
Angenieux 5.9 Arri MT	1,490.00
Ultra T 9mm Arri/CPR MT	1,100.00
Ultra T 12.5mm Arri/CPR MT	800.00
Ultra T 16mm Arri/CPR MT	700.00
Ultra T 25mm Arri/CPR MT	650.00
Extra special: Set of 4 Ultra T's above	2,800.00
Kinoptik 25mm f2 Arri MT	100.00
Kinoptik 75mm f2.0 Arri MT	175.00
Kinoptik 100mm Arri MT/CMT	250.00
Kinoptik 150mm f2.5 Arri MT	400.00
Schneider 100mm f2.0 Arri MT	495.00
Canon 18-108 f1.6 CMT	500.00
Angenieux 12-140 AZO CMT	3,000.00

Subject to
Prior
Sale!

Packs/Belts New Battery

Cine 60	
9107 Pack 8/12V	\$280.00
9114 FC Pack ± 7.2V	250.00
9707 Pack Univ 7AH	375.00
7003 Belt 8/12V 7AH	260.00
7004 Belt 30V 7AH	590.00
6301 Belt 8.4V	170.00
6307 Belt 8.4V/12V	250.00

New Lighting Equipment

4C140 CP Pro Kit (5 lite)	\$650.00
4C010 CP Bubble lite Kit (2-lite)	400.00
4C120 CP Cat Kit	225.00
4C100 CP Aero Kit	450.00
Lowell S192 Kit	330.00
Lowell T194 Kit	710.00

New Sound Equipment

Nagra Stereo Recorder	\$5,000.00
Nagra SNN Recorder	2,300.00
Nagra SMR Mic Mixer	400.00
Nagra TSR260 Resolver	450.00
Nagra LPS SN Resolver	450.00
Sennheiser K3U Power Supply	110.00
Sennheiser ME20 Omni Mic	50.00
Sennheiser ME88 Dir. Mic	150.00
Sennheiser ME80 Dir. Mic	135.00
GKC Amplifier Speaker	195.00
GKC Mic Cue Head	55.00

New Support Equipment

Universal 12BVS Fluid Head	\$475.00
Universal 205BV w/Ball	525.00
Gitso 505B Legs w/Ball	380.00
Lisand TK76 Shoulder Mount	25.00
Lisand SSP73 Shoulder Brace	125.00
Quickset Quick Release	50.00
Cine 60 Snaplock Jr.	130.00
Marotzke Shoulder Pad	10.00

New Editing Equipment

8T000 U/F 16 Upright Flatbed	
6 Plate Editing Console	\$7,900.00
8T004 35mm Tower for above	
Flatbed	8,800.00
Maier Hancock 816 Hot Splicer	370.00
Perfix 16/35	190.00
Perfix 16	155.00
Cine Bug 16	95.00
Cine Bug 35	95.00
Cine Care CC 16/35	189.00
Used Movieola UL20S	\$975.00
Used Movieola UL20CS	
w/search	\$1,150.00

Video Equipment

Technicolor 1/4" VCR	\$895.00
Technicolor 412 Color Camera	795.00
Panasonic 1/2" VCR Portable	899.00
Panasonic 1/2" VCR Portable	
Programmable	1,099.00
Panasonic PK 700 Color Camera	595.00
Panasonic PK 801 Color Camera	895.00
Used NEC 71 CP w/9-108 Fujinon Lens,	
AC Power Supply, Battery, Broadcast	
Quality	14,000.00
Used JVC 4400 Recorder/AC Adapter	2,500.00

For more information on Motion Picture Equipment,
Sales, Service & Rentals, call or write.

Please mail me additional information:

☐ Service ☐ Sales ☐ Rentals

Name _____

Address _____

City _____

State _____ Zip _____

THE BOOKSHELF

BY GEORGE L. GEORGE

GENRES AND TECHNIQUES

A comprehensive and useful catalog, H.K. Harrison's *THE MYSTERY OF FILM—II*, is, as well, a remarkably informative historic guide to the use and properties of this essential adjunct to quality photography. All the varieties of available filters are listed and described as to their properties, effects, white light transmission characteristics as plotted on a serviceable system of spectro-graphic curves, and such recent innovations as black dot texture screens, opticolor and the ingenious strip filter (Harrison & Harrison, 6363 Santa Monica Blvd., Hollywood, CA 90038; \$14.95).

John Culhane's expert guidance takes us through the magic world of visual illusions in his *SPECIAL EFFECTS IN THE MOVIES*. A large extensively-illustrated volume, it provides clearly written, detailed explanations of every optical, photographic and mechanical effect, three-dimensional model animation, matte painting and many other fantastic devices, as well as profiles of their imaginative creators (Ballantine \$9.95).

Christopher Finch describes in *OF MUPPETS AND MEN* the complex production problems of the popular show, the deft hand and/or rod manipulations and remote control devices, and mostly the inventive artistry of Jim Henson and his inspired collaborators. This is a sumptuous book, superbly illustrated, that does justice to an exceptional show (Knopf \$27.50).

Danny Peary's *CULT MOVIES* is a heady trip among films with an idolatrous following, a surprising medley of 100 pictures including *Casablanca*, *Eraserhead*, *Singin' in the Rain* and Andy Warhol's *Trash*. Each is synopsized with full credits and perceptively discussed in entertaining fashion (Delta \$13.95).

In *SPLATTER MOVIES*, the goriest and most outrageous horror films are viewed by John McCarty with knowledgeable appreciation, tracing the *genre* from the Grand Guignol theater in Paris to the bloody orgy of *The Texas Chain Saw Massacre* (FantaCo, 21 Central Ave., Albany, NY 12210; \$8.95).

George Hurrell, Clarence Sinclair Bull, Ernest Bachrach and Laszlo Willinger are



11710 Baltimore Ave.
Beltsville, MD 20705
(301) 953-9600

Steadicam Sales,
Rental and
Consultation

TO ORDER
TOLL FREE
800-638-4480

well represented in John Kobal's **HOLLYWOOD COLOR PORTRAITS** along with other outstanding photographers of the stars. This stunning collection of 76 pictures illustrates the evolution of the art, spurred by technical progress in color photography from the mid-1930s to the mid-1950s (Morrow \$19.95).

The photographer's distinctive personality, as reflected in his work, is contrasted in **DOUBLE TAKE** by juxtaposing prints of the same subject by different artists. Richard Whelan's sensitive analysis probes the subtleties of style and composition in 70 pairs of photographs, reaching from Steichen and Stieglitz to Ansel and Cartier-Bresson (Potter/Crown \$19.75/\$10.95).

The filming of *Caligula* and the weird events that surrounded the production of this \$17 million, triple-X rated epic financed by *Penthouse* publisher Bob Guccione are documented in **ULTIMATE PORNO** by the film's assistant director PierNico Salinas. A spectacular book—definitely not for the easily shocked (Eyecontact, 465 Lexington Ave., NYC 10017; \$15.95).

ASPECTS OF CINEMA

Employment opportunities in film, television and the stage are extensively discussed by Judith A. Katz in her practical guide, **THE BUSINESS OF SHOW BUSINESS**. Behind the scenes jobs in production, administration and supporting services are clearly described, and many useful tips cover the stimulating potential of a wide-ranging field (Harper & Row \$11.50/\$5.25).

Financing the production of documentary films is detailed in Bruce Jackson's informative manual, **GET THE MONEY AND SHOOT**, a practical source of data on how and when to apply for government, foundation and corporate grants (Documentary Research, 96 Rumsey Rd., Buffalo, NY 14209; \$15).

The extent to which Hitchcock's jealously guarded private life affects his cinematic style is explored by Michael Haley in **THE ALFRED HITCHCOCK ALBUM**, in which his predilection for quiet dignity is contrasted with the excitement and drama of his films. A bibliography and a filmography complete this engrossing study (Prentice-Hall \$17.95/\$9.95).

An art form in itself, the flamboyant and often bizarre architectural style of U.S. movie theatres is recaptured in all its fantasy in David Naylor's **AMERICAN PIC-**

TURE PALACES. Catering to popular taste, 250 of these structures are reproduced in this lavish record of a long gone period (Van Nostrand Reinhold \$29.95).

Expertly compiled by Albert W. Strickland and Forrest J. Ackerman, some 200 domestic sci-fi films of the 1897–1929 period are listed in **A REFERENCE GUIDE TO AMERICAN SCIENCE FICTION FILMS** (Vol. 1) with complete production data and synopses (TIS Publications, Box 1998, Bloomington, IN 47401; \$29.95).

WRITING FOR THE SCREEN

From the U. of Wisconsin Press, two new volumes in the unequalled collection of scripts of Warner Bros. films of the 1930s: **I AM A FUGITIVE FROM A CHAIN GANG** (John E. O'Connor, ed.) and **DARK VICTORY** (Bernard F. Dick, ed.). Each book contains the complete annotated screenplay, critical essays, production and cast credits, and other relevant material (\$15/\$5.95 ea.).

In **HISTORY OF THE WORLD—PART I**, Mel Brooks has written a comedy farce in the grand manner, an exuberant fantasy where verbal puns, visual gags and mental incongruities provide as much laughter for the reader as for the viewer (Warner \$5.95).

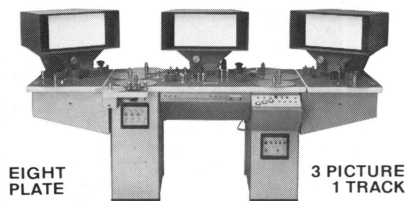
A perfect sample of the Monty Python style of zany comedy, the script of **TIME BANDITS**, written by Terry Gilliam and Michael Palin, creates a world of its own where logic takes on a new, wild meaning that defies, yet precludes explanation (Doubleday \$9.95).

In **RAIDERS OF THE LOST ARK**, Lawrence Kasdan's screenplay of the George Lucas production includes over 200 storyboard drawings that provided a step-by-step, scene-by-scene guide to the complexities of the fantasy adventure film (Ballantine \$6.95).

Harold Pinter's brilliant screenplay of **THE FRENCH LIEUTENANT'S WOMAN**, John Fowles' romantic novel, successfully meets the challenge of transposing a tale of love and transgression in Victorian England to a contemporary theme of morality and sexuality (Little Brown \$11.95).

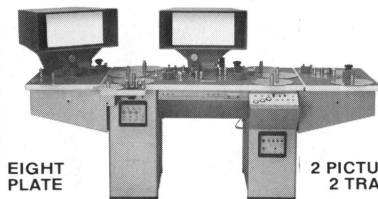
Co-scripted in 1963 by Sinclair Lewis and Dore Scharly, **STORM IN THE WEST** is a political allegory with an anti-Nazi slant, which MGM shelved because of its "controversial" content (Stein & Day \$5.95).

KEM Universal



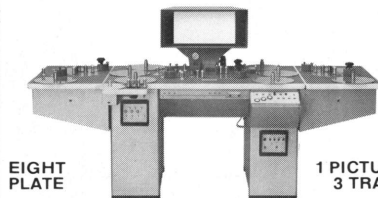
EIGHT PLATE

3 PICTURE 1 TRACK



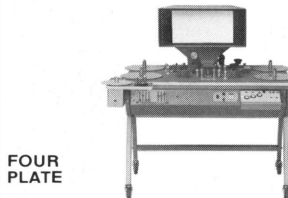
EIGHT PLATE

2 PICTURE 2 TRACK



EIGHT PLATE

1 PICTURE 3 TRACK



FOUR PLATE

1 PICTURE 1 TRACK

The ultimate in versatility.

The KEM Universal is interchangeable, *in seconds*, from Picture to Sound, and vice versa. Plug-in modules—no tools. Switchable aspect ratios: Anamorphic, 1.85:1, Academy—even 16mm.

The KEM Universal has become the standard in 35mm horizontal editing. It's the ultimate in versatility. And it's the most magnificently built editing machine in the world. You get what you pay for.

EAST OF THE ROCKIES:

MM Editing Systems Inc.
230 Park Avenue (at 45th St.), Rm.
339, N.Y. N.Y. 10169 (212) 697-5865

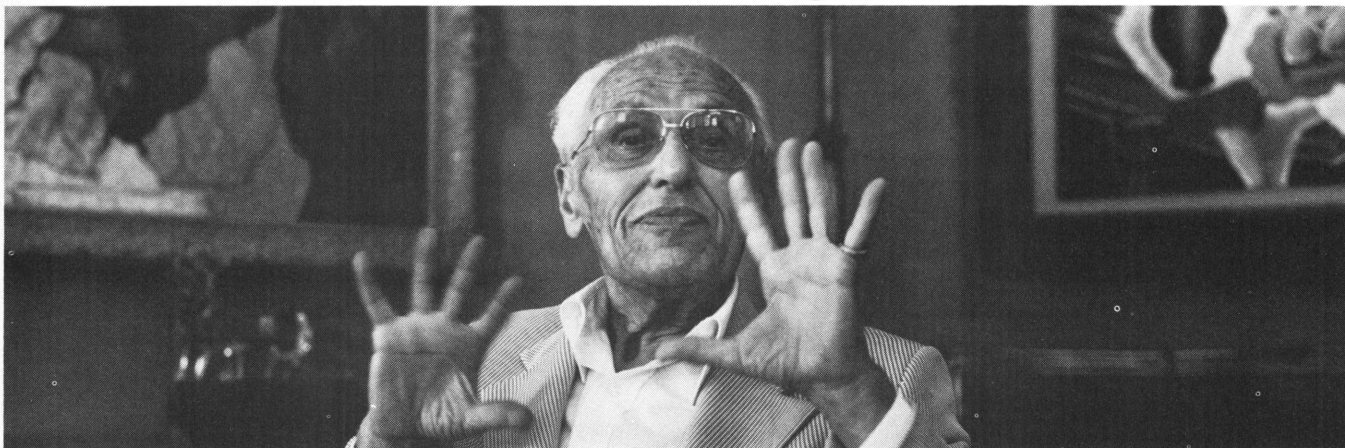
WEST COAST AND TEXAS:

KEM Editing Systems Inc.
7237 Santa Monica Blvd., Hollywood
California 90046 □ (213) 850-0200

KEM



CUKOR



"A director must never overwhelm a picture; he must serve it."

Born in 1899, George Cukor is a truly legendary film director. His fifty films, noted for their great style, include Little Women, Camille, The Philadelphia Story, Gaslight, A Star is Born, and My Fair Lady. He won the Academy Award for the Best Director for the latter in 1964.

"I don't believe in improvising. Occasionally it works, but usually it doesn't. You say, 'This is funny!' But the next day when you see the dailies, it is not at all funny. What it is, is undisciplined. I like a well-written script. That's what attracted me to *Rich and Famous*, my new film with Candice Bergen and Jacqueline Bisset. It was a charming and funny script.

"The style of comedy has changed since some of my early films—*Adam's Rib*, *Pat and Mike*, *Born Yesterday*. The way it's presented is more subtle. You can't give audiences the same old chestnut. It must have an air of freshness. Still, the thing that gives any film vitality—the thing that makes it funny—is the writing.

"I'm not a writer. I'm not an *auteur*. And I'm not a collaborator. I'm a director. Very few people can write. How do all these new directors get the idea they're also writers? My great respect for the writer grew out of my theatrical background. I was a stage manager in New York, where I worked for many years. Then in 1929 I was shipped out to Hollywood to become a dialogue director, once the talkies began. It

was my job to get the actors to speak their 'titles,' as they called dialogue in those days. So I've always been dedicated to the script. A director must never overwhelm a picture; he must serve it.

"I've done two made-for-TV films—*The Corn is Green* and *Love Among the Ruins*—and I liked doing them very much. The problems were quite different from doing theatrical releases. The budgets were smaller; the shooting schedules were shorter, even the framing tighter. It was a challenge. I'd do it again.

"The directors of today are no different from the directors of yesterday. The difference is the audience. They're not more intelligent, they're just different. Perhaps more demanding, more impatient. Which means certain qualities change. Like naiveté. Naiveté is something we seem to have lost in films. Perhaps that's why my film *The Bluebird* was not a popular success. You can never play down to today's audience. Times change; you have to change with them. The worst thing of all is to become old-fashioned.

"There's a lot of talk today about the enormous budgets of many feature films. But you can't put a ceiling on creativity. You can't blame the director for wanting more. The director simply must work closely with a solid producer who can translate the monetary realities down to the director, without impairing spontaneity or the director's artistic control.

"I read recently where a director took sixteen months to shoot a feature. I shot

all of *Dinner at Eight* in twenty-seven days. We used no special shortcuts. We were just working until we were done. I happen to think it still looks very stylish. William Daniels was my cinematographer—he did many of my black-and-white films. And when I shot in color, the great George Hoyningen-Huene was my special color consultant for pictures like *A Star is Born* and *Bhowani Junction* and *Les Girls*.

"I don't think I'd shoot in black-and-white again. Color, if you know how to use it, can be just as stark or fashionable. You simply have to discipline yourself. I can't imagine *My Fair Lady* in black-and-white. I've always shot on Eastman film and always will. It really does the best job; the standards are always the highest."

If you would like to receive our publication for filmmakers, KODAK Professional Forum, write: Eastman Kodak Company, Dept. 640, 343 State Street, Rochester, N.Y. 14650.

© Eastman Kodak Company, 1981

EASTMAN KODAK COMPANY
MOTION PICTURE AND AUDIOVISUAL MARKETS DIVISION
ATLANTA: 404/351-6510
CHICAGO: 312/654-5300
DALLAS: 214/351-3221
HOLLYWOOD: 213/464-6131
NEW YORK: 212/930-7500
ROCHESTER: 716/254-1300
SAN FRANCISCO: 415/928-1300
WASH., D.C.: 703/558-9220



**America's
Storyteller**

CINEMA WORKSHOP

By ANTON WILSON



BATTERY LIFE

The service life of a Nicad battery is tied to many parameters, but temperature is by far the most relevant. It has been stated that high ambient temperatures greatly reduce the life expectancy of a Nicad by accelerating the deterioration of the organic elements of the cell, such as the separators or the gasket. Temperature is such a dominant factor that I believe some quantitative data should be presented before we leave the topic.

The graph in FIGURE 1 depicts the relationship between service life and average ambient temperature. In general, room temperatures are ideal for charging, discharging, and storage. (Lower temperatures are preferred for prolonged storage; -30°C to 20°C / -22°F to 68°F) Temperatures above 22°C / 72°F begin to reduce the service life of the battery. An elevated temperature of only 38°C / 100°F can reduce the life of a Nicad by more than 50%. At 50°C / 122°F , a Nicad can be expected to deliver only 20% of its normal service life. There are many conditions where these elevated temperatures may be encountered. Obviously tropic climates quite normally exhibit such temperatures. However, similarly high temperatures are encountered if batteries are left in direct sunlight, or in the trunk of a car parked in the sun, or on charge for excessive periods of time. It should be realized that this graph is based on average ambient temperature. Short excursions above normal temperatures should have no permanent detrimental effects. Optimum life will be realized if deviations above room temperature are kept to a minimum.

Another aspect of batteries worthy of quantitative consideration is the relationship of discharge current to both capacity and voltage. In general, higher discharge currents reduce the available capacity, as well as lower the output voltage. This characteristic is most prevalent with sealed lead acid type batteries which exhibit severely reduced capacity at even moderate discharge levels. While Nicads fare significantly better, they nevertheless conform to this phenomenon. The graph in FIGURE 2 plots the relationships of discharge voltage as a function of available capacity at four different discharge rates. In this case, 100% capacity is defined at the "C" rate (1 hour rate) of discharge. If

the discharge current is increased to the "4C" rate, the battery will only deliver about 75% of its rated capacity, and at the "10C" rate, only 60%. As an example, a 2-ampere-hour battery used with a camera drawing two amps will yield a running

time of one hour. If this same battery were used with a light drawing eight amps, one might expect to get 15 minutes of operation. After all, four times the current should yield $\frac{1}{4}$ the running time. However, FIG-

Continued on Page 183

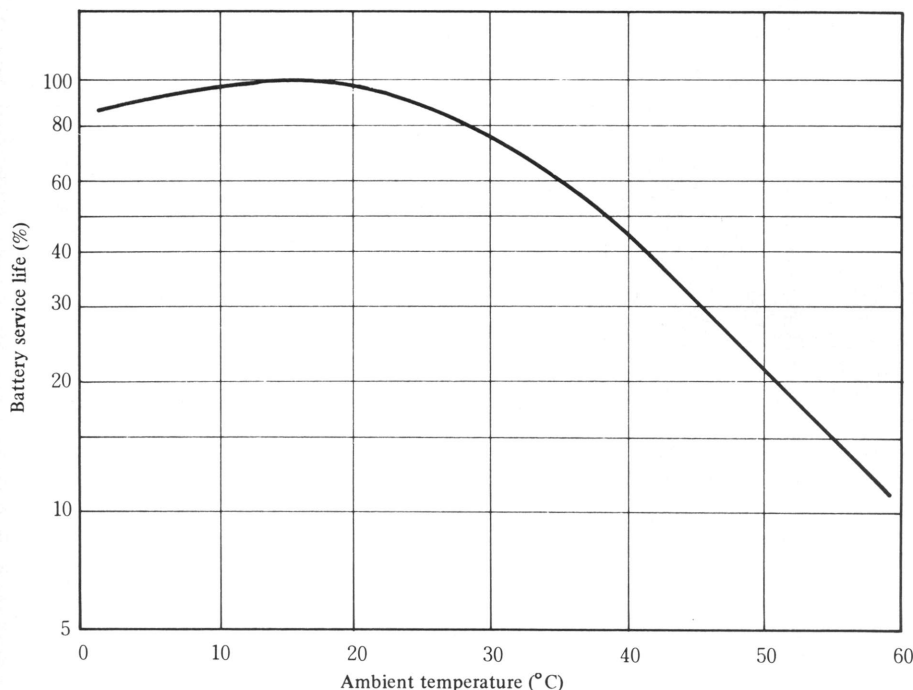
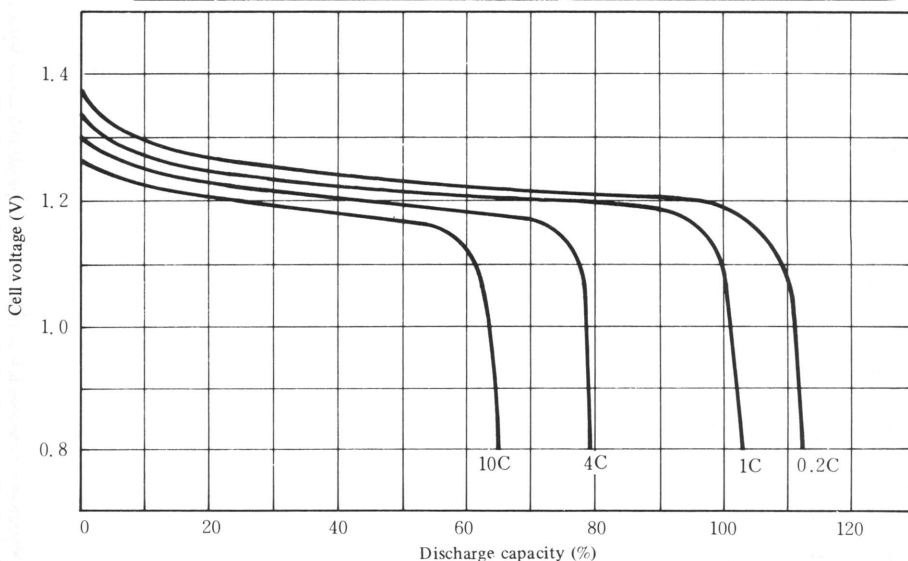


FIGURE 1—AMBIENT TEMPERATURE AND BATTERY SERVICE LIFE

FIGURE 2—DISCHARGE VOLTAGE CHARACTERISTICS. As discharge current increases, available capacity is diminished and plateau voltage is reduced.



Have you seen any Steadicam action lately?

Evidence of Steadicam in action can be seen everywhere.

Current feature productions such as *"The Shining," "Starting Over," "Fame," "Willie and Phil," "Altered States," "The Stunt Man," "Xanadu," "It's My Turn," "Wolfen," "Prince Of The City," "Four Friends," "Looking To Get Out," "True Confessions," "Kramer Vs. Kramer," "Blow Out," "Gloria," "Reds," "Silence Of The North," "The Idolmaker," "Only When I Laugh," "The First Deadly Sin," "The Chosen"* — to mention a few — and quality TV programs such as *"Little House On The Prairie," "The Miracle Worker," "The Hal Linden Special," "60 Minutes,"* as well as countless documentaries and commercials ... all vividly testify to the widespread use of Steadicam.

No question about it. Our Oscar-winning Steadicam film/video camera stabilizing system has ceased to be a novelty. It is now becoming a standard item in the filmmaker's basic arsenal of production tools. As elementary as a tripod or a dolly. But with far greater universal applications.

For Steadicam is an extremely practical all-purpose production tool of enormous versatility. Not at all restricted to running shots or esoteric special effects.

But far beyond its obvious practical advantages, Steadicam has generated an exciting new cinematic idiom that enhances the scene with a heightened sense of fluidity and intimate realism.

And, of course, our unique Steadicam system can be used — interchangeably — with most portable 35mm, 16mm and video cameras currently in professional use. Which is why so many independent filmmakers, studios and production companies prefer to own their Steadicam system.

We offer complete Steadicam/camera and accessories package deals to meet your every requirement. And our exciting "state-of-the-art" lease/upgrade program is custom-tailored to suit your financial needs.

Don't delay. Buy or lease your Steadicam now. And get all the benefits of tax write-offs and equipment ownership, as you enjoy the convenience and rewards of working with your own Steadicam system.

For further information, please contact:

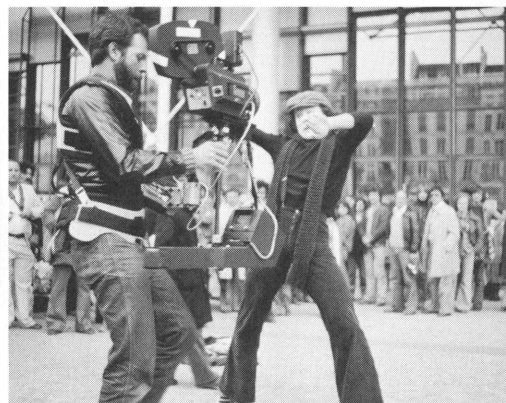
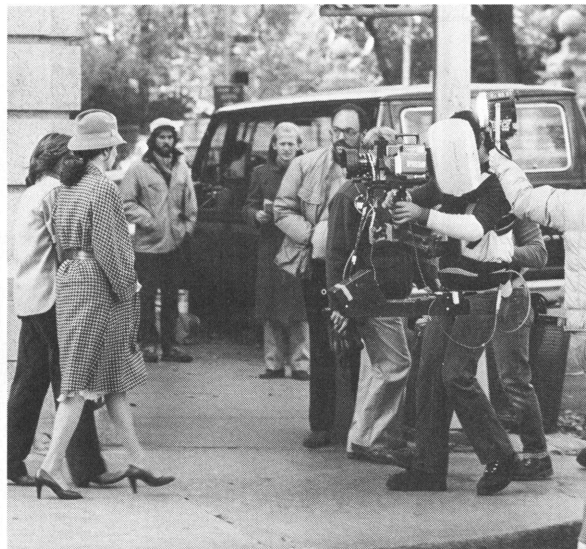
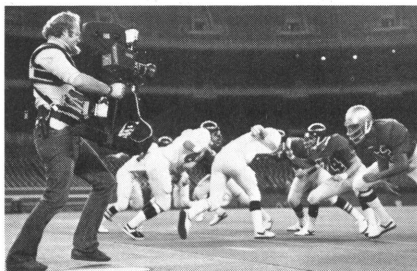
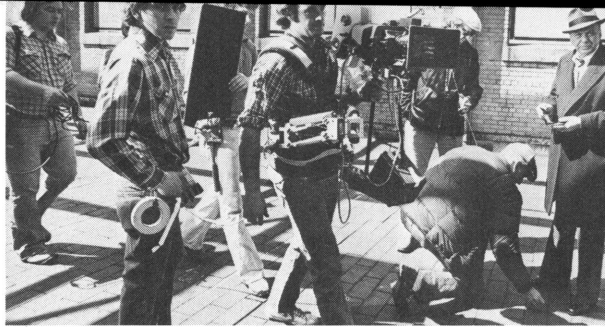
cinema E products
CORPORATION

Technology In The Service Of Creativity

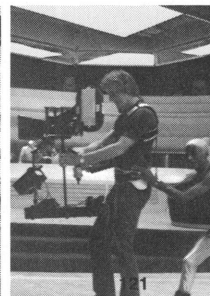
2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

STEADICAM® is covered under U.S. Patent No. 4,017,168 and under foreign patents abroad.

AMERICAN CINEMATOGRAPHER, FEBRUARY, 1982



Write for your free copy of our 8-page reprint of Garrett Brown's article in the August 1980 issue of *American Cinematographer*, describing the extensive use of Steadicam in the filming of Stanley Kubrick's *"The Shining."*



"HEARTBEEPS"...AND HOW IT WAS FILMED

A fanciful cinematic romp about robots who fall in love and run away together makes use of some technology that is new to the screen medium

For Val and Aqua it was love at first sight. The brittle touch of his hand—the fluorescent glow of her eyes. It was more than physical, and they knew they would be together forever.

Or at least until their battery packs ran out.

HEARTBEEPS is a robot romance set in the near-future of 1995. It's about two top-of-the-line companion series robots who wander away from a repair factory to explore the world around them. And find love. Suffice it to say that what happens is truly electric.

Andy Kaufman and Bernadette Peters head the cast, which also stars Randy Quaid, Kenneth McMillan, Christopher Guest, Melanie Mayron and three mechanical robots: Phil, a child built out of spare parts; CatSkil, a crazy uncle, and

CrimeBuster, a malfunctioning police unit.

The Universal Picture was produced by Michael Phillips, directed by Allan Arkush and written by John Hill. The music was by John Williams, and Doug Green was executive producer. Special make-up effects were by Stan Winston, and Phil was designed by Jamie Shourt and Robbie Blalack.

Kaufman stars as ValCom-17485, a robot programmed for valet service with a specialty in lumber commodities.

Peters stars as AquaCom-89045, a hostess-companion robot specially designed to assist at poolside parties.

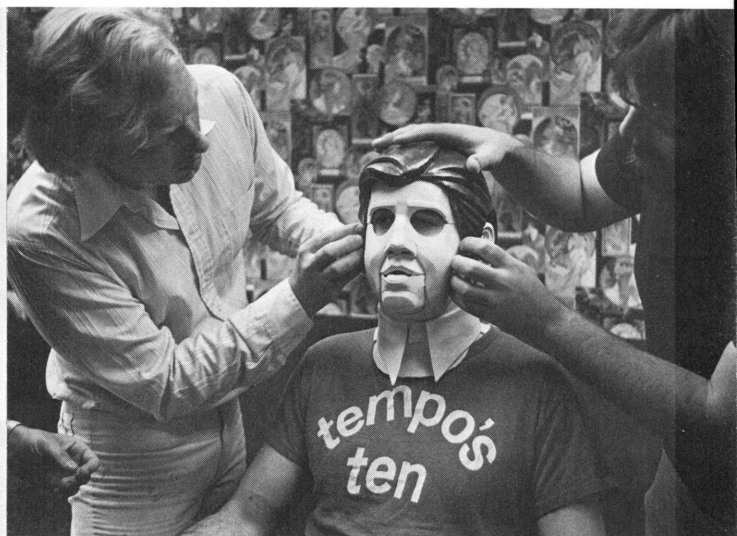
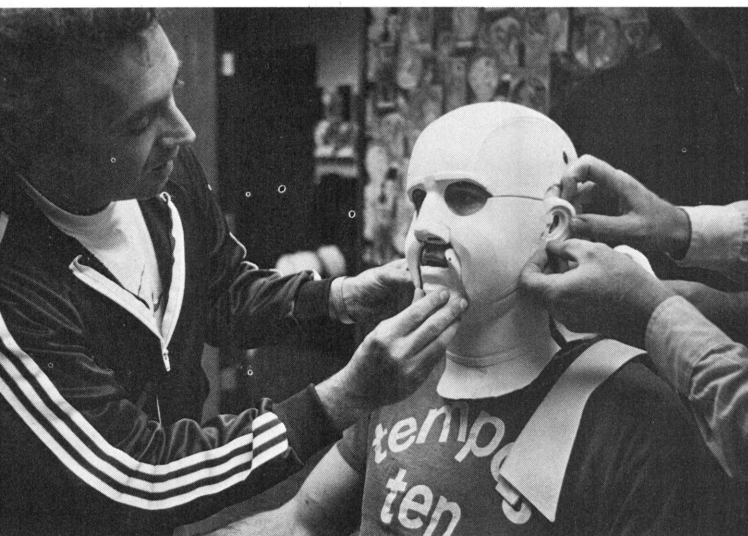
Quaid and McMillan are Charlie and Max, factory humans who must search for the missing robots. Mayron and Guest are also humans, junkyard owners and junk connoisseurs Susan and Calvin Gort.

HEARTBEEPS was filmed on location near Santa Cruz, California; at a junkyard in Gardena, a factory in Pacoima, a ranch in Newhall, and on sound stages and the backlot at Universal Studios.

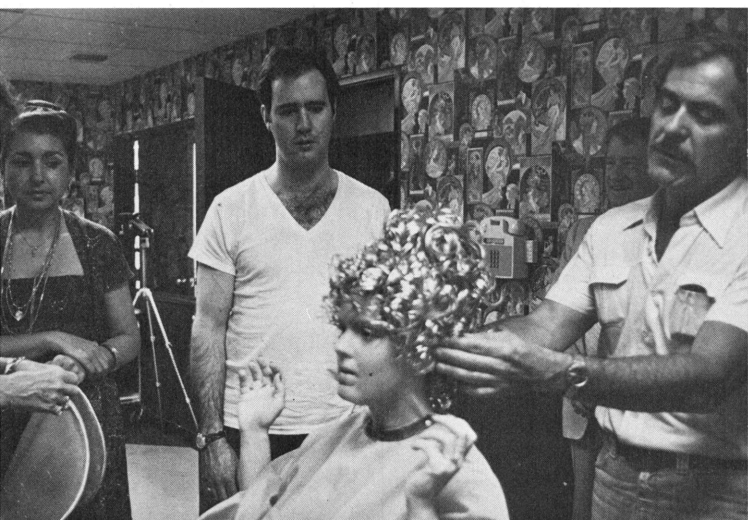
THE ORIGIN OF THE STORY

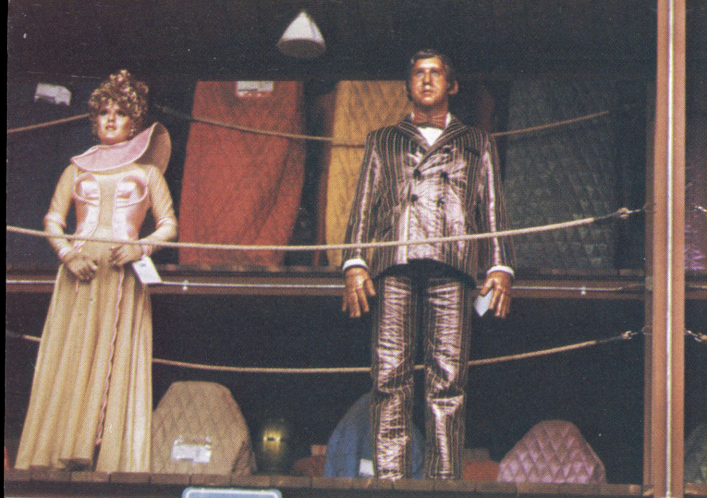
Writer John Hill sat having lunch one day with Michael Phillips, producer, to discuss movie ideas. The two men had known each other for several years and thought the time was right to find an idea that excited both of them. But nothing was working that day so they just had lunch.

"I happened to mention an idea for an off-beat little novel I'd started to write some time before," Hill recalls, "but I told Michael I didn't think it was a very commercial novel. However, he loved it as a movie, and we started work right away de-

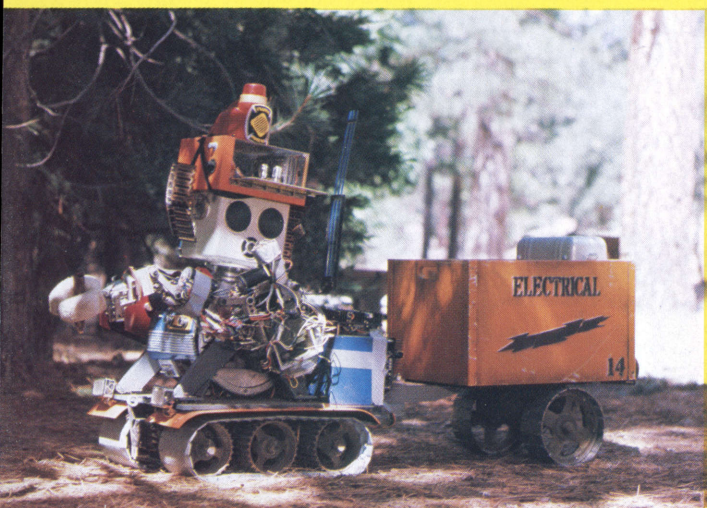


(ABOVE) "Appliances" (as they are called by makeup artists) are fitted to the face of Andy Kaufman, playing the robot ValCom-17485 in Universal's HEARTBEEPS. A gelatinous material made of ground-up calves hooves was made into masks, which were cut into pieces (appliances) and fitted to the faces of Kaufman and Bernadette Peters. New appliances were made each day and surfaced with eight coats of metallic robot paint. Designed by Stan Winston, the makeup required an average of four hours to apply, with the assistance of 20 people. (BELOW LEFT) A metallic wig is fitted to Bernadette Peters. (RIGHT) Miss Peters poses with dummy double.





(LEFT) Aqua and Val meet while on the shelf of the warehouse, awaiting their respective assignments, and it's love at first "beep." Watching a magnificent sunset (augmented by one of the 20 "stylized realism" matte paintings by Albert Whitlock), they decide to run away together to explore the outside world. (RIGHT) Susan and Calvin Gort are the laidback proprietors of a junkyard, where the robots think they are in heaven and play among the spare parts. The sequence was filmed at Cal-State Metals, a real junkyard in Gardena, Calif. (BELOW LEFT) For Val and Aqua the fruit of their romance is baby robot Phil, shown dragging his wagon full of spare parts. (RIGHT) The happy little family strolls through the woods at dusk.



A steely old uncle robot, CatSkil, tells corny jokes. Comedian Barry Diamond sat inside the cramped quarters of this robot for comedy timing.



veloping a script. Now Michael says he wants to hear only ideas I don't think are very commercial."

Michael Phillips Productions set the deal with Universal Pictures and principal photography began Wednesday, June 11, 1980.

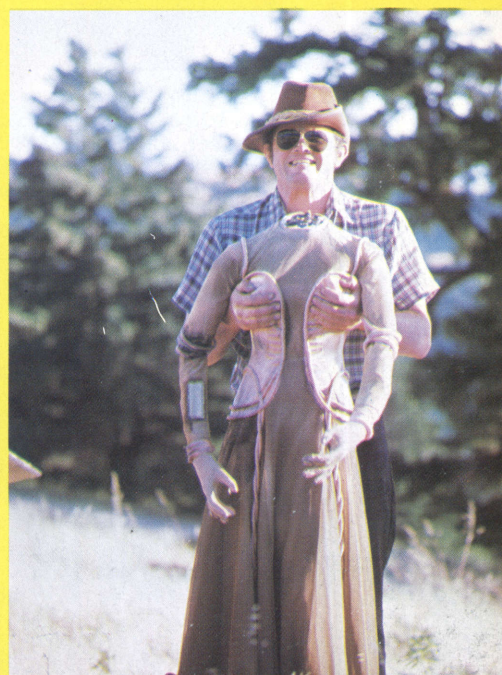
When the actors' strike hit at the end of July, HEARTBEEPS kept rolling for an extra week using only its mechanical actors, which are considered members of the "property guild." Had the original plan of using mechanical robots even for the main characters been implemented, filming could have gone even longer.

The cameras rolled again October 27 and finished December 10. In spite of the strike, most of the crew members returned, many having turned down other job offers during the three-month strike. Many said they wanted to continue to help make HEARTBEEPS into a film.

THE SETTING

From the redwood forests near Santa
Continued on Page 170

Chivalry is not quite dead. It never hurts to give a lady a hand—or two, if necessary—even if she is a real dummy. A bit of humor on the set.



BEHIND THE CAMERA ON "HEARTBEEPS"

The photographic challenge of blending fantasy creatures into the world of reality creates a charming film with an aura all its own

Charles Rosher, Jr., ASC, Director of Photography on HEARTBEEPS, comes by his talent honestly, being the son of Charles Rosher, Sr., ASC, who, together with the late Karl Struss, ASC, was honored with the first "Best Cinematography" Academy Award back in 1928 for their stunning photography of SUNRISE.

But the son of the famous cinematographer is an artist of the camera in his own right. His credits as Director of Photography include: THE LATE SHOW, THE ONION FIELD, A WEDDING, NIGHT WING, MOVIE MOVIE, SEMI-TOUGH and THREE WOMEN.

In the following interview for *American Cinematographer* he discusses the agonies and ecstasies of photographing HEARTBEEPS:

QUESTION: Since most of the main characters in HEARTBEEPS are ro-

bots (including those played by humans in highly stylized makeup), I should imagine that this posed some rather unique photographic problems. Can you tell me a bit about those problems?

ROSHER: The female robot, Aqua (Bernadette Peters) wears makeup of a gold tone, while the male robot, Val (Andy Kaufman) wears makeup that is a bit darker and more of a reddish hue. As a result, she reflects much more brightly than he does. When you get down to moody or night sequences where the lighting is low key, Val's reflective surfaces tend to go muddy in the shadow areas. To compensate for this, when we were photographing scenes of both of them together, we had to build up the reflective values on him, especially in the shadows. For example, a scene might

start out with the two of them in an area with a normal key; then they would walk into an area lighted a stop-and-a-half under. Aqua's makeup, being gold, would hold up very nicely in the shadows because of its relatively high reflectivity, but we would have to compensate for the darker and redder makeup of Val.

QUESTION: What method would you use for effecting this compensation?

ROSHER: We would compensate with reflective light quite a bit. This, plus carefully worked out angles of reflection for picking up the curves in the structure of the faces. We could get a nice reflective angle with a showcard or a softlight and this, in relation to the camera angle on the scene, would bring out the robots' features.



(LEFT) Charles Rosher, Jr., ASC, Director of Photography on Universal's fantasy of robot love, HEARTBEEPS. (RIGHT) Rosher and crew setting up to shoot a scene in the vast robot warehouse, a studio set in which the expositional first sequence of the film is played. (BELOW LEFT) The warehouse set, built on Stage 28 in the studio, was a very large three-story complex in which overhead lighting was initially used to create a "comic strip" atmosphere, but in later sequences many sophisticated lighting changes take place here. (RIGHT) CrimeBuster, the paranoid villain of the piece, a cross between a police car and a small tank.



QUESTION: Speaking of a lack of reflectivity, what about the lighting problems posed by CrimeBuster?

ROSHER: Well, of course, *CrimeBuster* is a self-propelled vehicle that looks like a cross between a small tank and a police car—and it has a black, highly reflective surface. Separating it against the dark greens of the dense forest was a challenge, but photographing it at night, especially against black water (as it travels across the lake) was really difficult. Even though it carried some lights, it was basically a black vehicle against black water. In order to give it a bit more form we mounted little gold reflective surfaces all the way around the vehicle.

QUESTION: What could you do by way of lighting to separate *CrimeBuster* at night?

ROSHER: When we used straight directional light nothing recorded. What we had to do was find reflective angles from which to photograph it and use white cards or silks—anything in order to get some kind of surface outline or form to show up. When *CrimeBuster* was traveling at night, in a lot of cases it would go through a rural town where we would have buildings in the background. We put lights in the windows and streaks of light on the buildings, so that it would separate from the background. Otherwise it would have gone black-on-black and blended into the night. We also had to be careful because *CrimeBuster's* little dome, being completely black and shiny, reflected everything. We didn't want it to reflect things that didn't look right—such as lights or cameras or all of us.

QUESTION: The little scene-stealer in the picture is Phil, the robot child of Aqua and Val—immaculately conceived from spare parts. What was it like photographing him?

ROSHER: Phil had eyes that were very human, in the sense that he could roll them up and down, close them and blink. The eyes were lighted from a rheostat that could adjust their brightness anywhere from T/1.4 to T/22, and that intensity could be changed right in the middle of a shot, if necessary. This was very good, because it meant that the brightness of the eyes could accommodate any lighting conditions that we wanted to use. We could take it from front light (which I don't like) outside in the daylight and move it into an area where the illumination came from backlight, and the intensity of the eyes would respond accordingly. Their in-



On the set of *HEARTBEEPS* at Universal Studios, *American Cinematographer* Editor Herb Lightman interviews Roshar, whose professional versatility ranges from the cheery, delicate aura of this subject to the stark drama of *THE ONION FIELD*. (BELOW) Setting up a low angle shot in the woods to get down to the level of Phil, the captivating child robot.



tensity could be read as high as T/22, and if we were stopped down to T/14 or T/11, those eyes would still respond and even become brighter in the bright sunlight. In other words, we had full freedom to balance the brightness of the eyes to the light level of the scene. Also, it gave

Phil a wide range of reaction to such emotions as pleasure or fear.

QUESTION: What about photographing just plain human beings alongside the robots?

Continued on Page 139

"Pins on location." Ron Dexter talks about shooting TV spots with the Arriflex 35-3.

To shoot *one* TV commercial on location, Mr. Dexter needs (at different times) high and low speeds, pin-registration, crystal-control for his HMI lights, compact size and sync sound. He owns two Arriflex 35 Type 3 cameras.



Cameraman/Director Ron Dexter (seen above with his crew and Arriflex 35-3 camera) is a member of NABET and the Directors Guild.

"We use both high and low speeds," says Ron Dexter. "With the 2C, if you wanted 12 frames per second, it was next to impossible. You couldn't get a steady speed that slow. With the ARRI 3, it's duck soup."

"On a TV spot for Burger King, we shot a 'magic basketball player' at 8 and 12 frames. He moved at normal speed; everybody else on the court moved extra slowly. Projected at 24, he seemed supernaturally fast. Then we had a shot of him slam-dunking the ball, at 100 frames."

Speed!... Action!

"In the old days, when you shot at high speed, you'd crank the camera up to speed. Then somebody said: *Speed*. Then somebody said: *Action*. That took about four seconds. Now, I roll and one second later I say: *Action*. At 80 frames per second, we save about fourteen feet of film."

At high speed, the 35-3 pays for itself.

"At 80 frames, twelve camera starts like that with the ARRI 3 save us enough, in raw stock and lab costs, to pay for a day's rental on the camera. At 100 frames, the camera pays for itself in about nine takes. We've made that many before lunch."

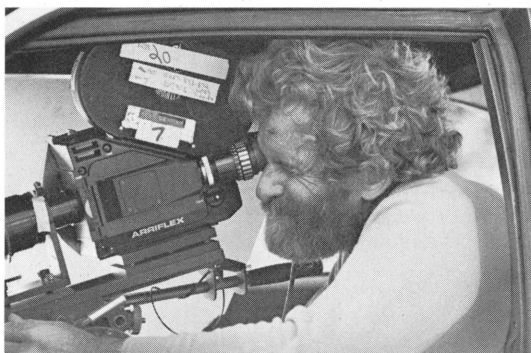
Of course, we're not renting the ARRI 3," says Mr. Dexter, "We *own* two of them — plus four old 35-2Cs."

**Same magazines,
same lenses as 35-2C.**

"The four 2Cs are four more reasons for buying the ARRI 3s. We can use the same magazines, same lenses. We often use multiple camera setups. Standardization helps there, too. We shot a stuntman (playing The Burger King) riding a bull. Stuntmen charge you by the take. We shot him with two ARRI 3s — one at 100 frames, the other at 50. We also had a 2C running at 24."

**We'll loop it. No
need, says soundman.**

"We recently made a Chevrolet Malibu spot on location in Michigan. There was one solitary lip-sync line in the whole shoot. It wasn't worth taking out a sync-sound camera just for that. It was a chest shot. The ARRI 3 was about eight feet from the actor. We had a shotgun mic two feet from him. I told the soundman: *We'll loop it.* He said: *No need — it's good.*"



Dexter shoots closeup inside car. For him, 35-3 is an all-purpose tool that is, among its other virtues, compact.

Crystal for HMIs.

"I'm using HMIs a lot," says Mr. Dexter. "I take a small 4.5 kilowatt generator on location with me, and a couple of 1.2K lights. When a cloud comes over, I can substitute the HMIs for sun backlight and continue shooting. This last winter there were two rainy days when we should have wrapped and gone home. Both days, we tented under clear Visqueen and shot everything we needed; there were no pickups. For HMIs, you need a crystal motor; the ARRI 3 has that built in."



"I need a registered camera," says Mr. Dexter. "The ARRI 3 gives me pins on location." The 35-3 camera body weighs only 12 pounds.

Pins on location.

"There are supers in almost every commercial," says Mr. Dexter. "I need a registered camera. The ARRI 3 gives me pins on location, inside a lightweight, compact M.O.S. camera. With the *same camera, same motor*, I can shoot high speed, too — and even exterior sync sound, sometimes. Not bad."

ARRI
ARRIFLEX CORPORATION

500 Route 303, Blauvelt, New York 10913. (914) 353-1400
600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
6467 Northam, Mississauga, Ont. L4V 1J2. (416) 677-4033

A MOVIE ROBOT IS BORN

By JUDY GABRIEL

Although his mannerisms are somewhere between klutzy and lovable, this uncannily human robot is capable of performing 24 separate maneuvers

They never complain, they never demand a raise, and the world's 85,000 working robots never take time off to go to the movies, not even when a fellow robot is playing the lead, as in Universal's HEARTBEEPS, a \$9 million "robot love story" slated for Christmas '81 release.

Produced by Michael Phillips, written by John Hill and directed by Alan Arkush, HEARTBEEPS features "Phil," a fully articulated robot, in this light-hearted and often satirical comedy, expected by its makers to match THE WIZARD OF OZ in general audience appeal.

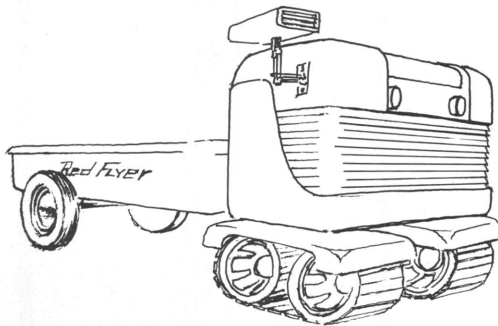
Unlike R2D2 of STAR WARS, or OZ's more primitive Tin Man, Phil is the first major film robot in 25 years that is not piloted by a human operator hidden inside a mere prop, or by an actor wearing a suit of futuristic shining armor. He is a true child of the electronic machine age, embodying state-of-the-art robotic techniques.

"Phil is a machine created by two other machines to assist them. As the movie progresses, they see Phil as their child," according to Oscar-winning Robbie Blalack (Best Visual Effects for STAR WARS), whose Motion Pictures, Inc. facil-

ity was awarded the contract to design and build Phil. With Jamie Shourt, his then-partner at MPI, and Max Anderson, chief designer and head of construction, Blalack and his staff delivered Phil in less than three months.

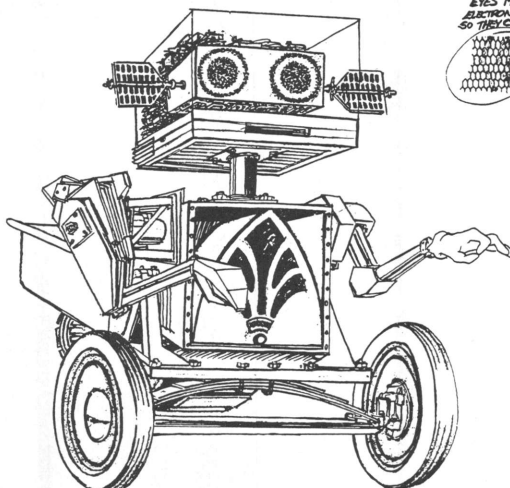
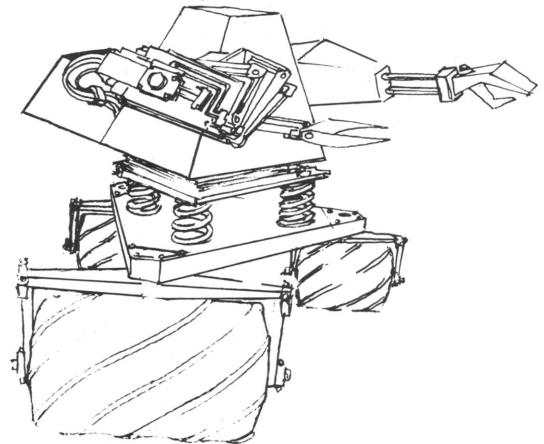
Standing a squat three-feet high on his baby-blue tank treads, the \$350,000 robot is capable of making 24 separate maneuvers, controlled by a team of four remote radio transmitter operators off camera.

The multi-terrain device was designed to fill the part of a robotic child, the offspring of two robot servants who fall in

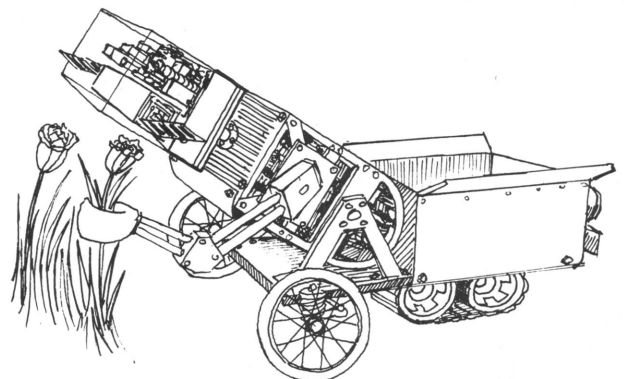


Phil

(LEFT) The first concept drawing (by Max Anderson) of HEARTBEEP's Phil, which uses an entire Philco radio as his body, with the facade of the radio serving as his facial features. A child's Red Flyer wagon becomes his trailer tandem. This sketch was done before Anderson met with producer Michael Phillips and director Alan Arkush, at which time he found out that Phil needed appendages to perform the various activities in the script. (RIGHT) Another concept of Phil by Anderson. In this model the top head portion rotates 360 degrees, while the middle carriage always remains stationary.



EYE BOX CAN TILT UP OR DOWN
EYES MADE UP OF ELECTRONIC DISPLAY SO THEY CAN CHANGE EXPRESSION

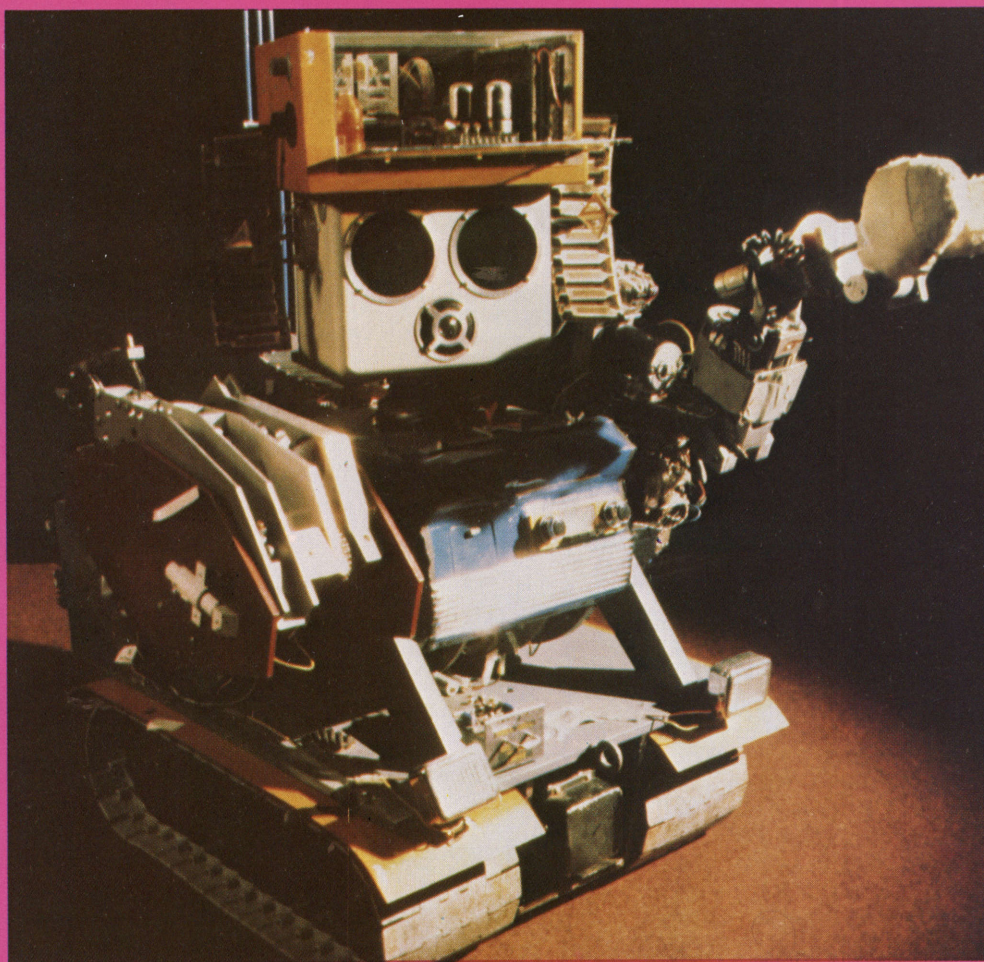


(LEFT) In this drawing, Max Anderson depicts Phil with an old fashioned Philco radio in his chest. (RIGHT) This drawing by Anderson illustrates Phil's tilt mechanism as he bends over to smell a flower and shows the mittened left hand given Phil to grasp objects with. Details pictured here, but not used in Phil's final design are the baby buggy wheels and the pick-up truck bed that was later replaced by a detachable wagon. Phil's complex design, construction and radio control system were produced by a large group of technicians, including Robbie Blalack, Academy Award-winning special effects producer.

love while awaiting service in a robot repair factory. Played by Bernadette Peters (*THE JERK*) and Andy Kaufman (*TAXI*), the two human actors are transformed under metallic-hued gelatin flesh-covering to become "robots." (Making actual robots to play the parts of humans would have cost at least \$1 million and taken a full year to prepare.) Escaping from their human owners, the two adult robots bring with them spare parts to insure their survival in the Northern California of 1995, and it is from these assorted components that Phil emerges.

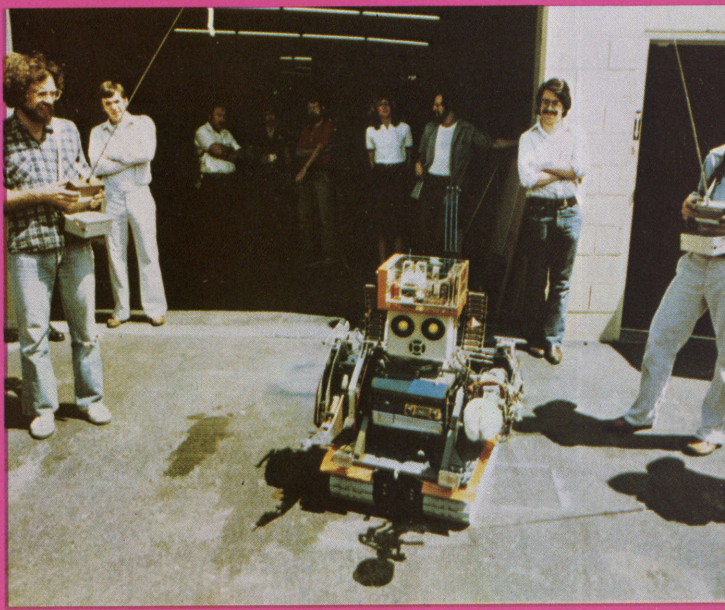
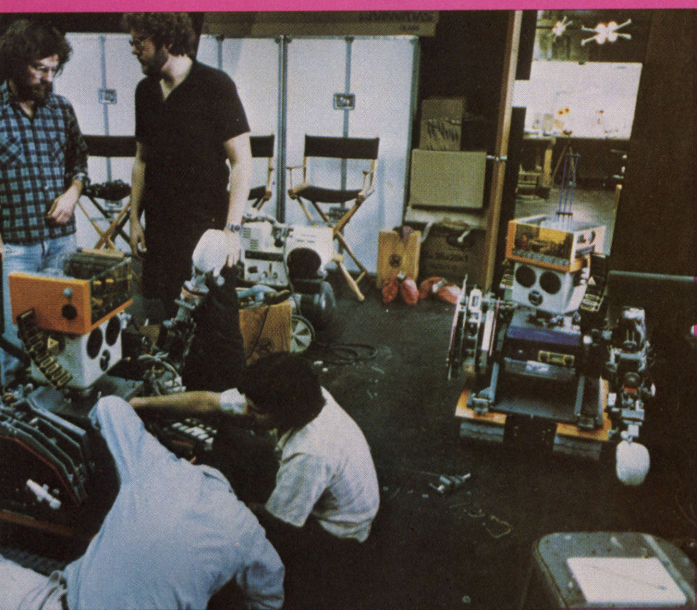
HEARTBEEPS' storyline dictates that Phil "grows" into a sentient, living robot with a robot-child's personality and a wide spectrum of childlike gestures, reactions

Continued on Page 184



Reaching out in all his automated glory, Phil, the \$350,000 star of Universal's *HEARTBEEPS*, poses for his formal portrait. The white mittened left hand with its two moving parts reaches out. The right arm features a functioning Swiss Army knife unit. More than 30 men and women spent nearly three months designing and constructing the star robot.

(LEFT) Phil undergoes final electronics assembly at Motion Pictures, Inc. special effects facility, where he was designed and constructed. (Clockwise) Daryl Dzioba, David Merritt, Neil Dreiseszun and Ralph Leitzgen. At far right is the exact duplicate of the fully-articulated robot. (RIGHT) His green eyes glowing and his asymmetrical arms extended, Phil is run through his electronic paces at the MPI facility by Daryl Dzioba (left) and Ralph Leitzgen (right). During the shooting of *HEARTBEEPS*, it took a four-person team to operate the six-channel remote radio transmitter units that activate the robot's 24 separate maneuvers.



Rosco diffusion makes the difference.

Subtle or dramatic, the exact effect you want is yours easily, quickly and at low cost.

As we've continued to develop the complete line of Rosco diffusion materials, cinematographers have continued to find new ways to employ them. The result of this collaboration is a virtually unlimited range of lighting looks.

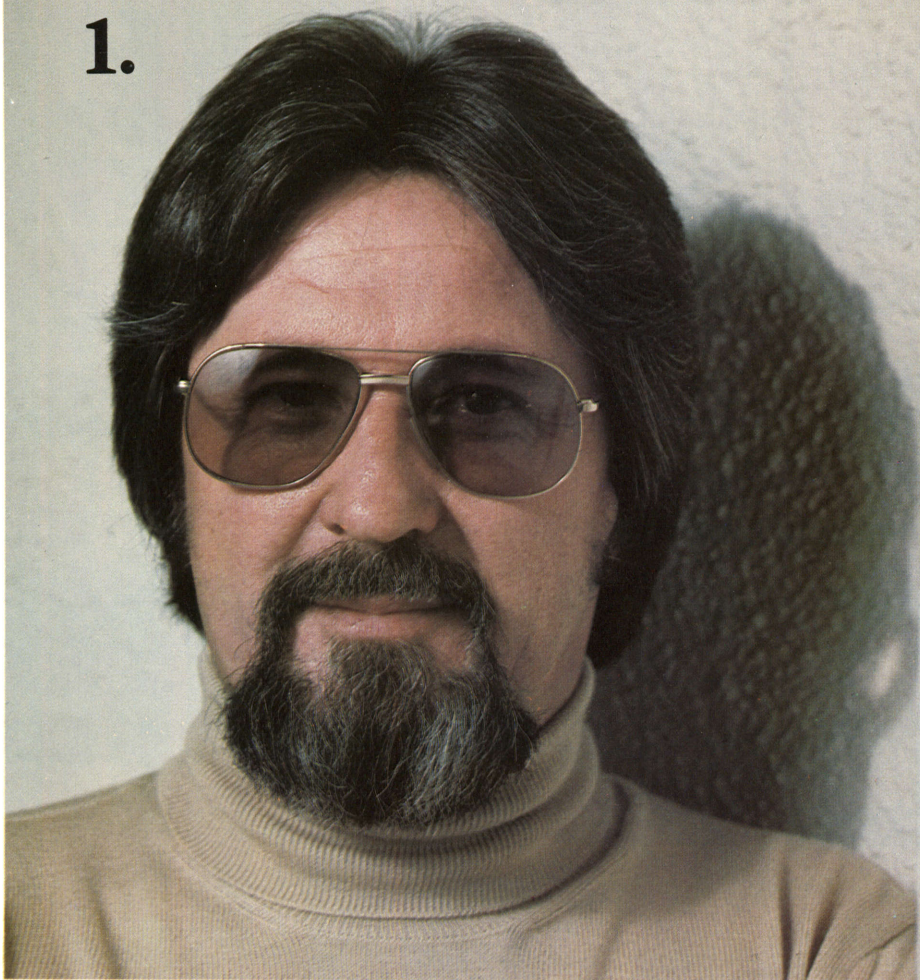
Here, cinematographer Laszlo Kovacs personally demonstrates the effect of just three Rosco diffusion materials on the same HMI 1200 source. (Photo 4 shows the effect of the luminaire alone. In the other photos, only the diffusion material changes.) Imagine all the effects you can achieve with Rosco's full line of 16 materials.

Some of them are dense enough to be used as white bounce surfaces as well as soft diffusers. Others are so transparent, they provide the merest touch of diffusion. Most are so heat-resistant, they can be used directly on the luminaire, if need be.

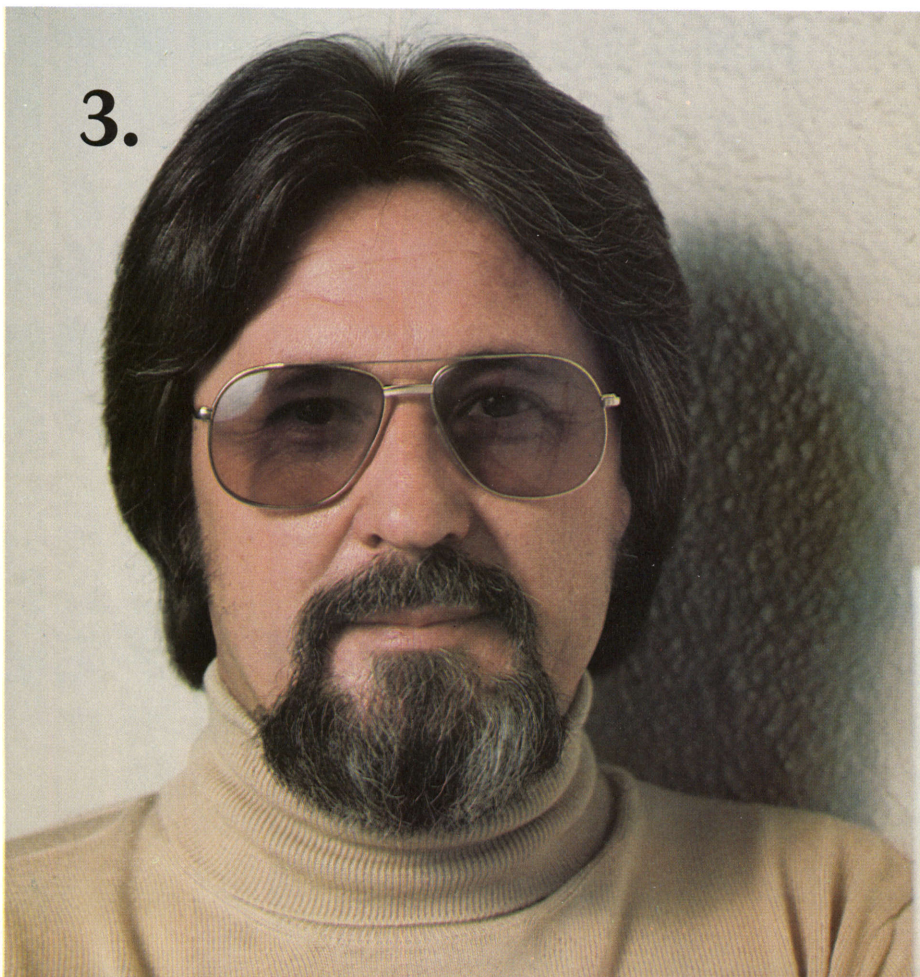
This range of tools—known as the Cinegel light-control system—has been judged worthy of an Academy Award by the Academy of Motion Picture Arts and Sciences.

For all the facts, contact your rental house, your local Rosco dealer or any Rosco office.

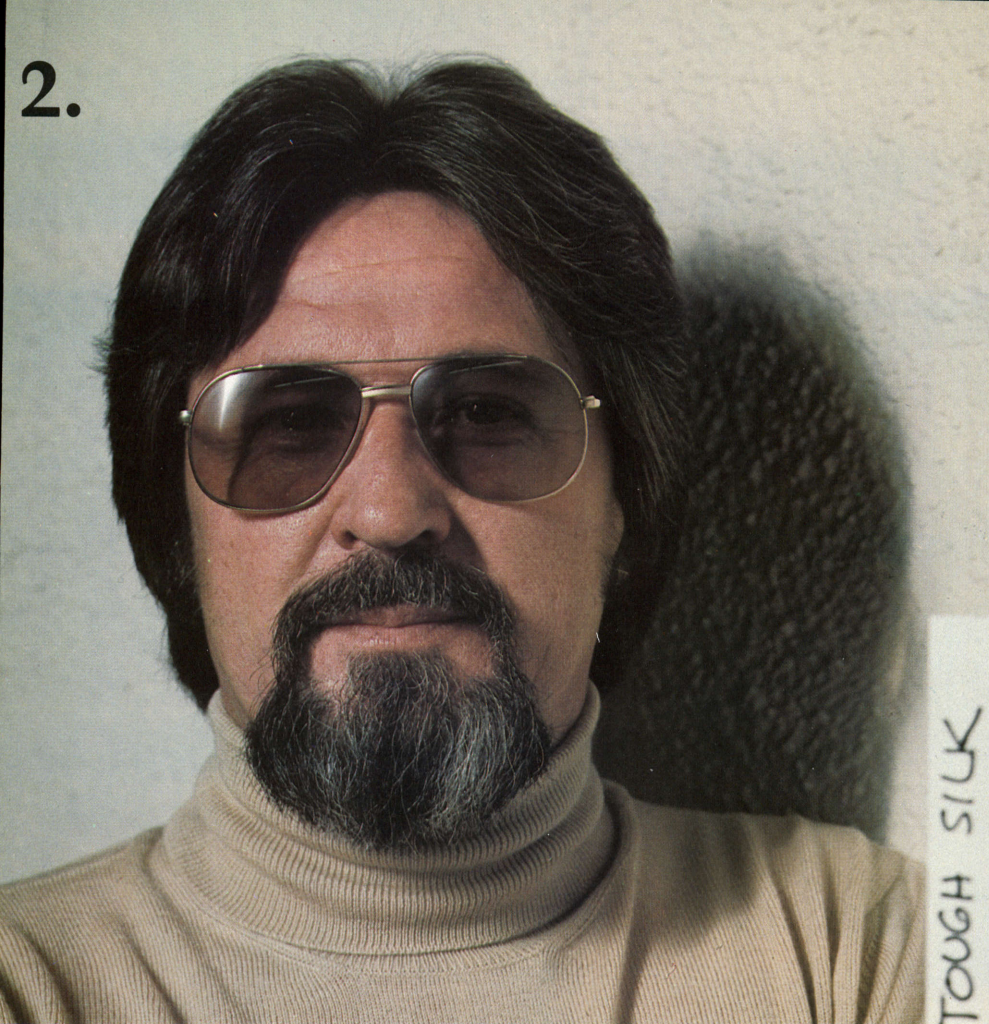
1.



3.



2.



1. Rosco Tough Spun.

The safe, plastic equivalent of spun glass, Tough Spun offers much the same quality of diffusion, but is far more durable and won't shed particles. (Light Tough Spun is slightly more transparent, with the same safety and durability.)

2. Rosco Tough Silk.

As you can tell from the image of the luminaire reflected in Kovacs' glasses, Tough Silk diffuses light in one direction only—in this case, vertically. The subject's shadow, although crisp vertically, is soft horizontally. Tough Silk can be used to shape a beam of light as well. Its specially treated surface optically elongates the beam on one axis. You control the diffusion effect by rotating Tough Silk in the frame.

3. Rosco Soft Frost.

To soften shadows while retaining a sense of the lighting source, Soft Frost is generally used in large frames placed between the source and the subject. For less diffusion, try Rosco Half-Density Soft Frost. To tent large areas with diffusion, use Rosco Wide Soft Frost, in six-foot widths. All Soft Frost materials have a slight warming effect to the color.

4. No diffusion.

The effect of the luminaire alone—an HMI 1200, in full-flood position—is shown in this control photo. In the other photos, only the diffusion material changes.

Free swatchbook.

Yours for the asking, the Rosco Cinegel Swatchbook shows all of our materials for diffusion, reflection, color temperature control and special effects.



36 Bush Avenue
Port Chester, NY 10573
(914) 937-1300 Telex: 131472

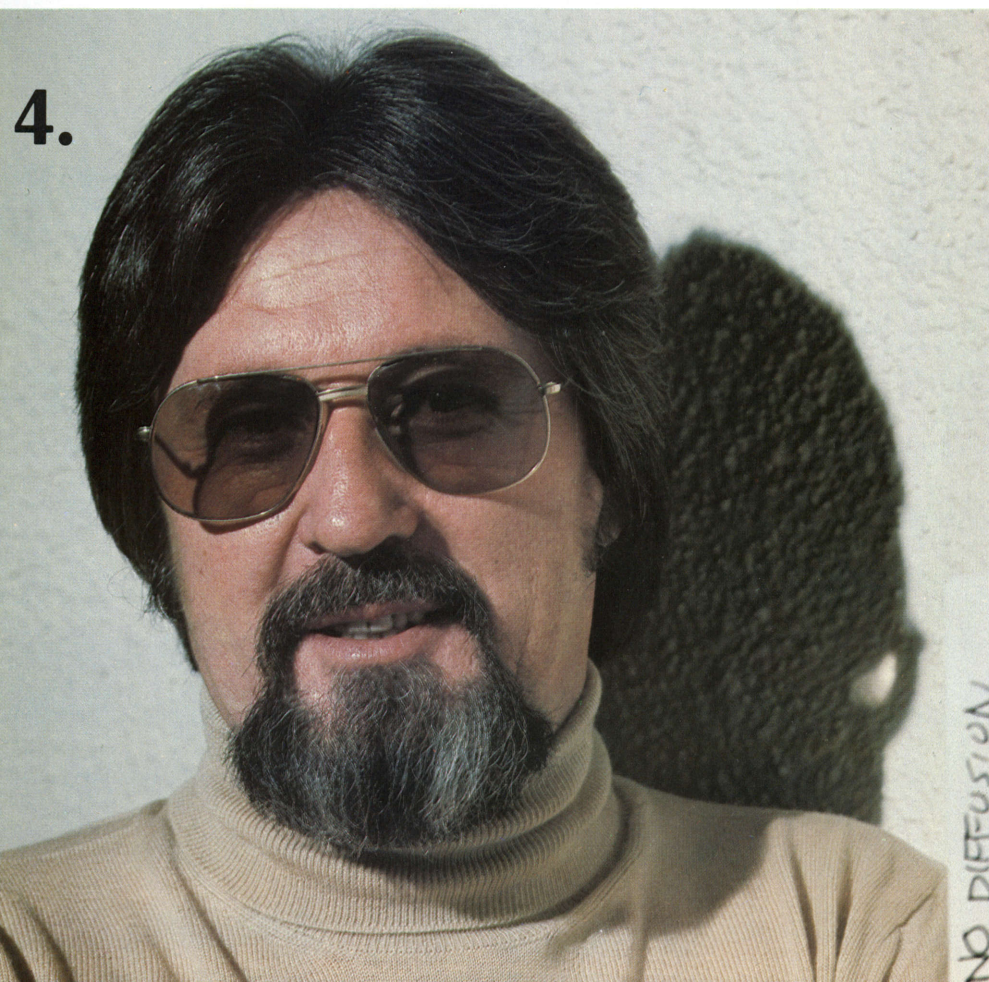
1135 North Highland Avenue
Los Angeles, CA 90038
(213) 462-2233 Telex: 691123

69/71 Upper Ground
London SE1 9PQ, England
01-633-9220 Telex: 8953352

About Laszlo Kovacs.

One of the country's most versatile and talented cinematographers, Laszlo Kovacs, ASC, has photographed such films as *The Legend of the Lone Ranger*, *Butch Cassidy and the Sundance Kid*, *New York, New York*, *F.I.S.T.*, *Inside Moves* and *At Long Last Love*.

4.



THE EMMY AWARD-WINNING PHOTOGRAPHY OF "LITTLE LORD FAUNTLEROY"

In its latest incarnation, a classic novel becomes a superb motion picture and wins for its Director of Photography the coveted EMMY

In the Thirty Third Annual EMMY Awards Presentation, held last September, the award for "Outstanding Cinematography for a Series" (for a single episode of a regular series), went to William H. Cronjager, ASC, for the "Hill Street Station" episode of the *Hill Street Blues* series.

The November, 1981 issue of this publication carried an interview with Mr. Cronjager in which he discussed his work on that project.

The EMMY Award for "Outstanding Cinematography for a Limited Series or a

Special" (for a single episode of a limited series, or for a special), went to British cinematographer Arthur F. Ibbetson, BSC, for "Little Lord Fauntleroy."

Unfortunately, Mr. Ibbetson, long one of England's foremost lighting cameramen, could not be present to accept his award personally—nor to be interviewed at that time for these pages. However, *American Cinematographer* Contributing Editor David Samuelson has since been able to speak with him at length and in the interview which follows, conducted in London by Mr. Samuelson, Arthur Ibbetson discusses his EMMY Award-winning photography of "Little Lord Fauntleroy":

QUESTION: Arthur, just remind me of the films that you've done in the past and where you started—the beginning of your career.

IBBETSON: I suppose my career started with being trained by a very famous American cameraman. Regrettably he is no longer with us, and that was Harry Stradling, Sr. on a film over here in 1938 called *JAMAICA INN*, which was a film made by the Charles Laughton/Eric Pommer Company. So that was how I first began as a clapper boy at a no longer existing studio, known as British International Pictures.

QUESTION: Then, as you progressed through as assistant and operator, which other cameramen did you work with in particular?

IBBETSON: I suppose the longest part of my career as an operator was spent oper-



Sir Alec Guinness and Ricky Schroder, shown in stills from Rosemont Productions' latest version of Frances Hodgson Burnett's *LITTLE LORD FAUNTLEROY*. Filmed in England for American television and theatrical release abroad, the film is a feast for the eye—thanks mainly to the inspired cinematography of Arthur Ibbetson, BSC.





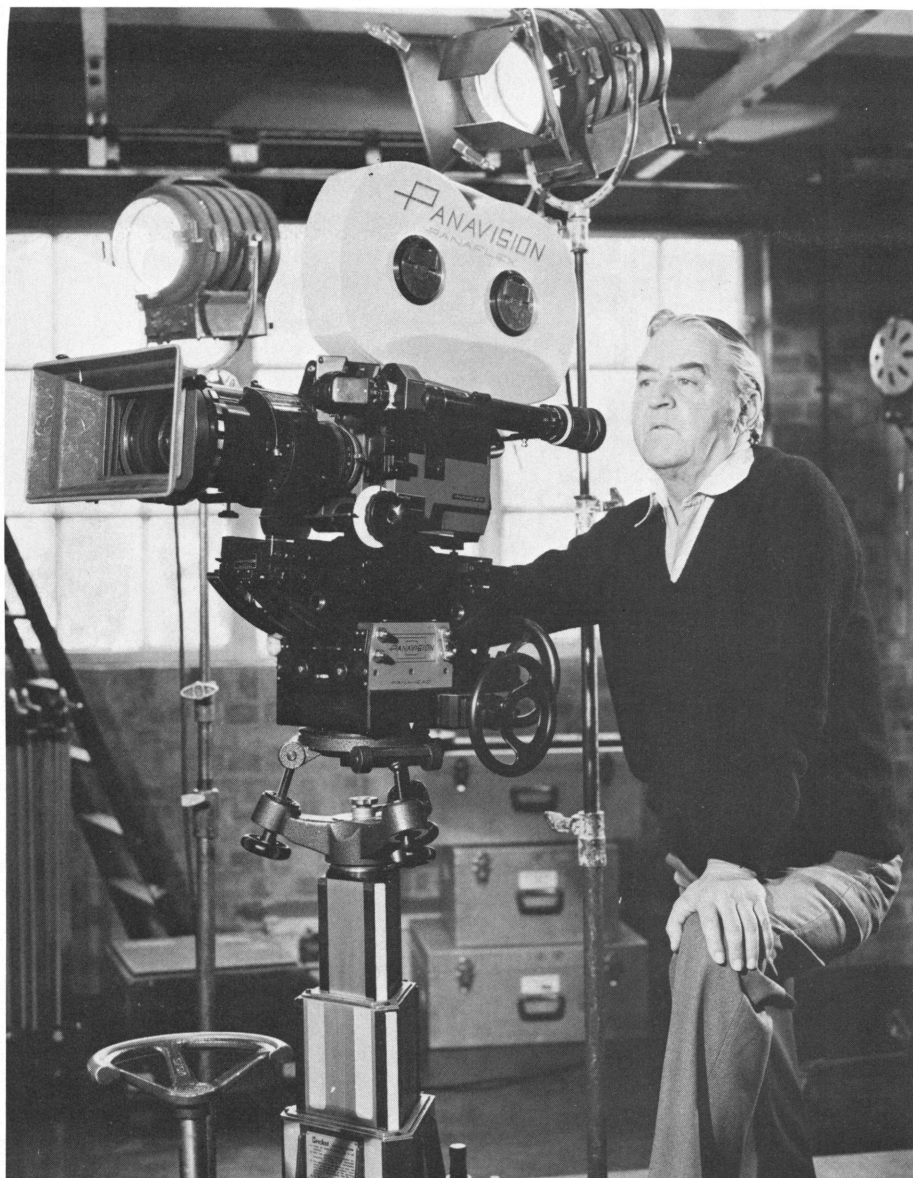
A lovely castle in the Midlands of England served as the major locale for the film and provided inspiration for the actors as well as the crew.

ating for Ossie Morris. I think I did about nine years with him. Lots of pictures. We seemed to have visited nearly every country in the world making them. *MOBY DICK* was a very pleasant experience, some days. The majority of the time it "was an 'experience'" but it was great to work with a director like John Huston. We never had it easy with John. What one expected to be just a straightforward closeup of someone always developed into a major operation, whereby you either were standing up to your neck in a river or at the top of a crow's nest or heaven knows where he could dream up to get away from the orthodox.

QUESTION: So, as a Director of Photography, which are the pictures that most come to mind?

IBBETSON: I should think the first one is a picture called *THE HORSE'S MOUTH* with Alec Guinness which was just a bolt from the blue. I hadn't been in any way considering moving up the scale from operating cameraman to lighting cameraman. It was just thrown at me overnight by Director Ronald Neame and it was an opportunity that I took. Why it comes to mind more than anything else, was that all the time I had been an operator it was the easiest thing in the world to go on to a

Continued on Page 156

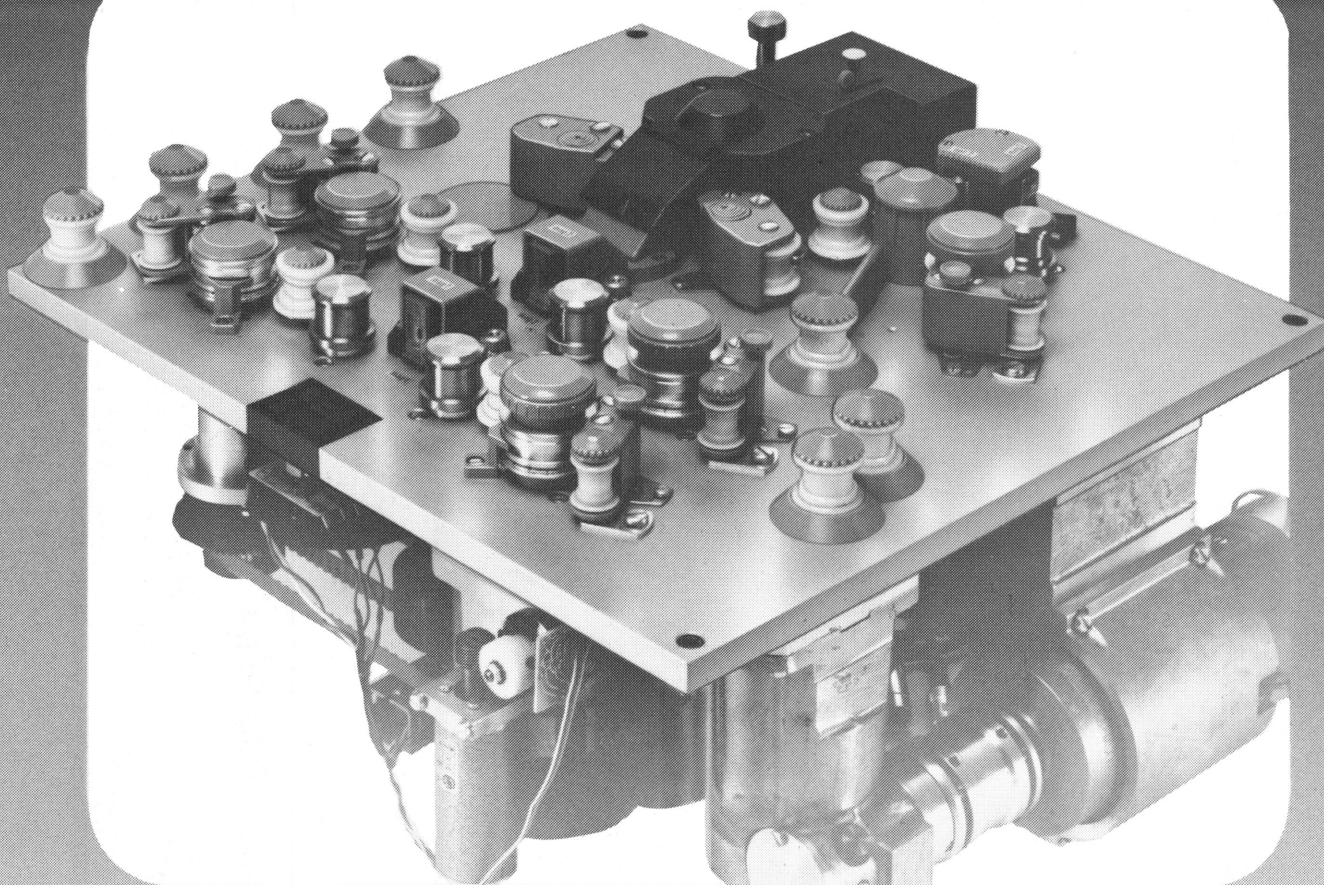


Arthur Ibbetson, BSC, Director of Photography on *LITTLE LORD FAUNTLEROY*, won the EMMY Award this year for "Outstanding Cinematography for a Limited Series or a Special". He had previously been nominated for the Academy Award for his photography of *ANNE OF THE THOUSAND DAYS*. (BELOW) The slums of New York's Lower East Side were recreated most realistically in England by Production Designer Herbert Westbrook and his crew.



THE HEART

STEENBECK precision in detail



QUALITY is not an accident. Years of experience, superior concepts, modern manufacturing procedures and an experienced team are the basics for STEENBECK quality.

Details:

- TRANSPORT PLATE precision machined, 16mm thick, assures vibration free operation and precise alignment of components. Anodized for easy cleaning and lasting beauty.
- PICTURE SCANNING through 18 sided polygon Prism affords bright and steady picture even under adverse light conditions.
- THREADING is simple and scratch free due to strategically placed film guides and rollers. Sync points are provided both right and left on most tables.
- FILM ROLLERS of large diameter, and made of stainless steel or polyamide plastic, provide a smooth safe film flow.
- MAINTENANCE FREE (Sintered, Oil impregnated) bearings and high precision, sealed, roller bearings guarantee smooth running and long life.
- FLYWHEELS combined with air damped tension rollers assure low wow and flutter content.



Steenbeck Inc.

(213) 998-4033 • Telex: 19-4293

9045 Eton Avenue, Suite A

Canoga Park, California 91304



"Even in the most extreme filming situations...my GSMO has never failed me."

Kim Takal
Director/Cinematographer

"The day I picked up my GSMO (SN #008) from Camera Mart, way back in March 1979, I found myself with feelings of great excitement and fear of the unknown.

"A brand new camera is always a source of apprehension. Especially when you don't often get a chance at second takes. Still, the GSMO design seemed ideal: a full sync unit, simple to use, with quick-change cassette-load magazines. So lightweight it can be carried everywhere in an attache-size case... ready to go at a moment's notice! The perfect camera for the kind of work my partner Joe Jay Jalbert and I do," says Kim Takal, vice president of Jalbert Productions, the New York based company that specializes in sports, adventure and action-type films.

100% CP Backup

"It takes time to learn a new camera. Till you really make it your own. And a brand new design is never problem-free at the beginning. My GSMO was no exception. But Cinema Products has always backed me up 100%... solving technical problems, updating my camera, giving guidance whenever I needed it.

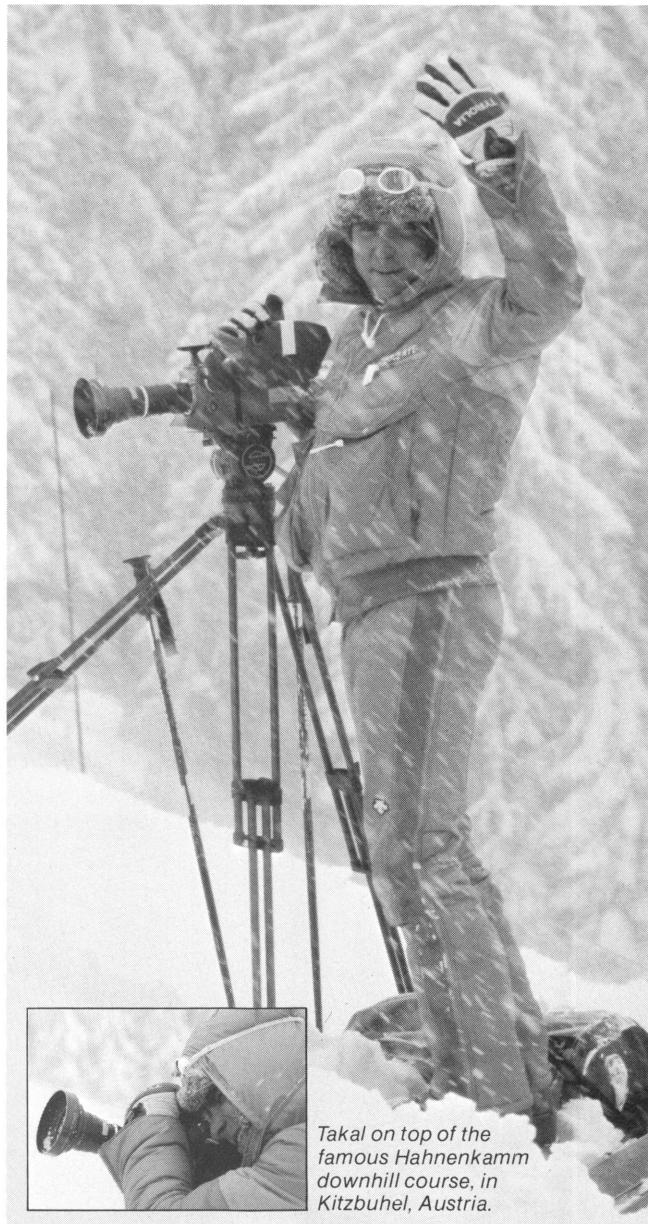
"The GSMO has since become our main camera. We depend on it for TV network coverage of events, for studio cinematography, for industrials and commercials. We have even blown up some GSMO footage to 35mm with astounding results.

A Liberating Experience

"For me, the GSMO has been a liberating experience in documentary production under the most extreme conditions. It has given me the freedom to concentrate less on the camera and more on the event I am filming!



Kim Takal filming a Soviet sprinter in Tbilisi, USSR, for NBC Sports.



Takal on top of the famous Hahnenkamm downhill course, in Kitzbuhel, Austria.

"Even in the most extreme filming situations: through a five-week tour of the Soviet Union for NBC Sports... from the Winter Olympics at Lake Placid to the World Cup downhill circuit in Europe... shooting at speeds from 24 fps to 64 fps in temperatures where the *high* of the day was -4° F... my GSMO has never failed me.

"My GSMO has been carried in backpacks up mountains, across rivers. It has gotten totally wet in the field. It has been coated with a sheet of frozen rain. And it has always worked.

"Skiing, hanggliding, canoeing, kayaking, speedskating, bobsledding... you name it, we've done it. And the GSMO has been there. Filming all the time.

"To paraphrase a famous commercial: Over the last two years, my GSMO hasn't gotten 'older.' It has just gotten better!"

For further information, please contact:

cinema E products
CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

THE TIFFEN STORY

By ANTON WILSON

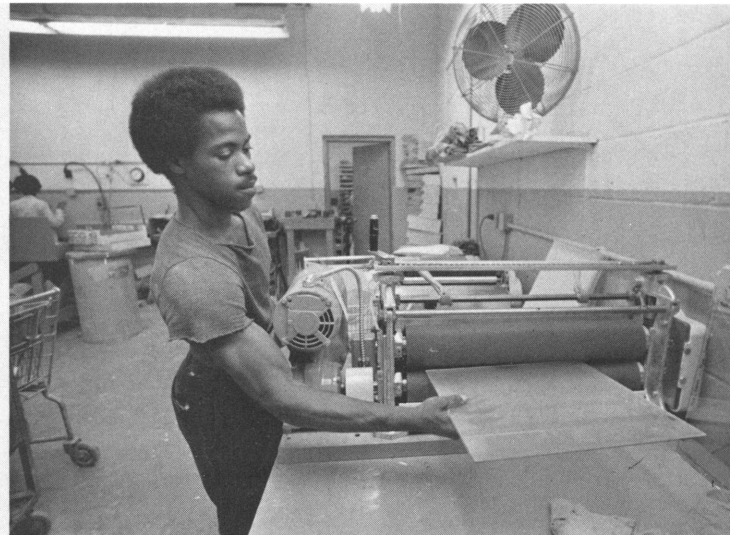
The latest in this journal's series of tributes to manufacturers of outstanding equipment for the motion picture and video industries

Say the name "Tiffen" to anyone. If they don't think "filters," they probably wouldn't think "film" at the mention of Kodak. Tiffen is quite a unique company. Very rarely does a single product line enjoy the combined reputation of being both the highest

quality and the most popular in its field. Tiffen now manufactures more than 1½ million filters a year, which makes them the largest filter manufacturer in America and very likely in the entire world. In addition to products bearing the Tiffen name,

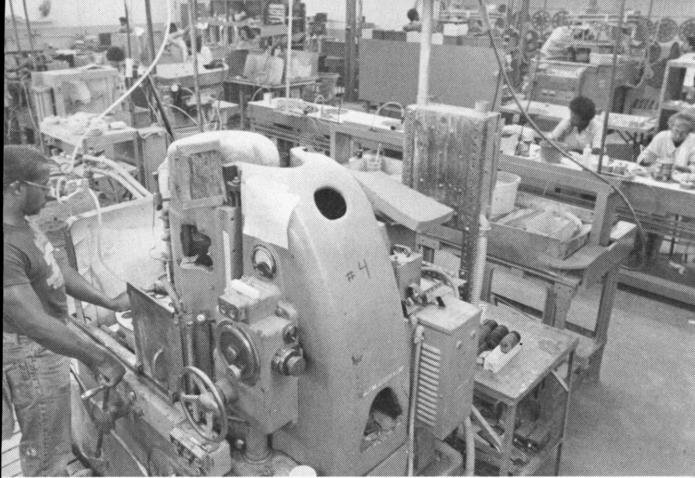
Tiffen also manufactures filters for Nikon, Canon, RCA, Panasonic, Norelco and many others.

The amateur market obviously accounts for much of the overall sales, but the Tiffen professional line currently accounts for a very significant portion of the business. Tiffen feels that innovation from the professional sector is the lifeblood of a good product line and, thus, a large R & D program is dedicated to the professional market. This research coupled with the unique Tiffen manufacturing techniques has resulted in a prestigious line of Tiffen professional products. Tiffen's professional filters, including the diffusions, low contrasts, and fogs, enjoy a large and loyal following among top cinematographers, and are also the choice of the world's largest professional rental organi-

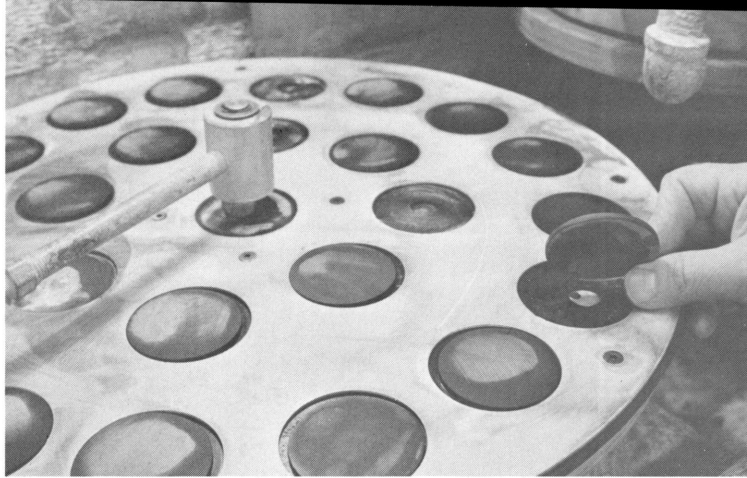


(TOP OF PAGE) The present Tiffen manufacturing facility in Hauppauge, N.Y., where the company moved after the 1978 fire. The plant encompasses 40,000 square feet and houses more than 130 employees. (ABOVE LEFT) The present Tiffen plant maintains a large machine shop that manufactures all the company's metal components. (RIGHT) After the laminating process, an extra piece of glass is temporarily bonded to the filter glass to facilitate the coring procedure. (BELOW LEFT) The coring process, where the sheets of glass laminate (with extra protective glass plate) are cut into circular filter blanks. (RIGHT) Glass blanks after the coring process. From here the blanks will be rough ground.





(LEFT) The rough grinding step. (RIGHT) The glass filters are ground to the approximate size and degree of flatness. Tiffen started over 35 years ago, making filter rings and adaptors. It was about 1948 or 1949 that Tiffen began to get involved with the glass and optics. Originally the glass was manufactured on the West Coast and shipped East for assembly.



zations, including Panavision.

Like most people, I was quite aware of Tiffen's large product line and their reputation for quality. However, I knew very little about the history of Tiffen or what made their products so highly regarded. That situation was rectified recently when I paid a

visit to the Tiffen factory. Nat Tiffen was my personal guide for a very illuminating tour through the world of Tiffen and filters.

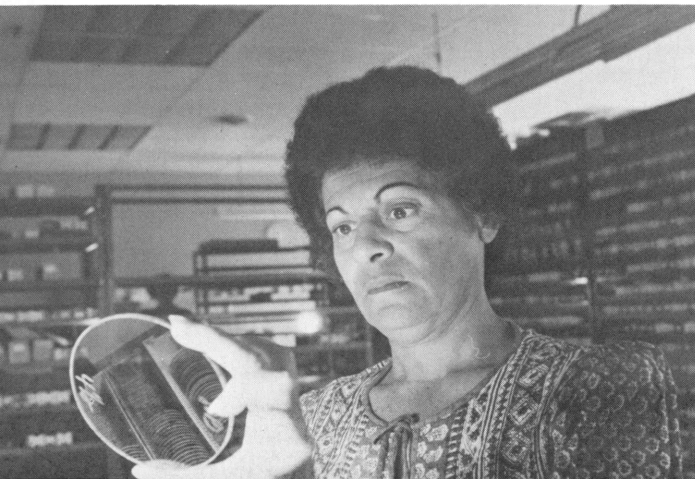
The history of the Tiffen company goes back over 35 years. The three brothers, Nat, Sol and Leo, had each been involved in related fields since 1938, but it was not

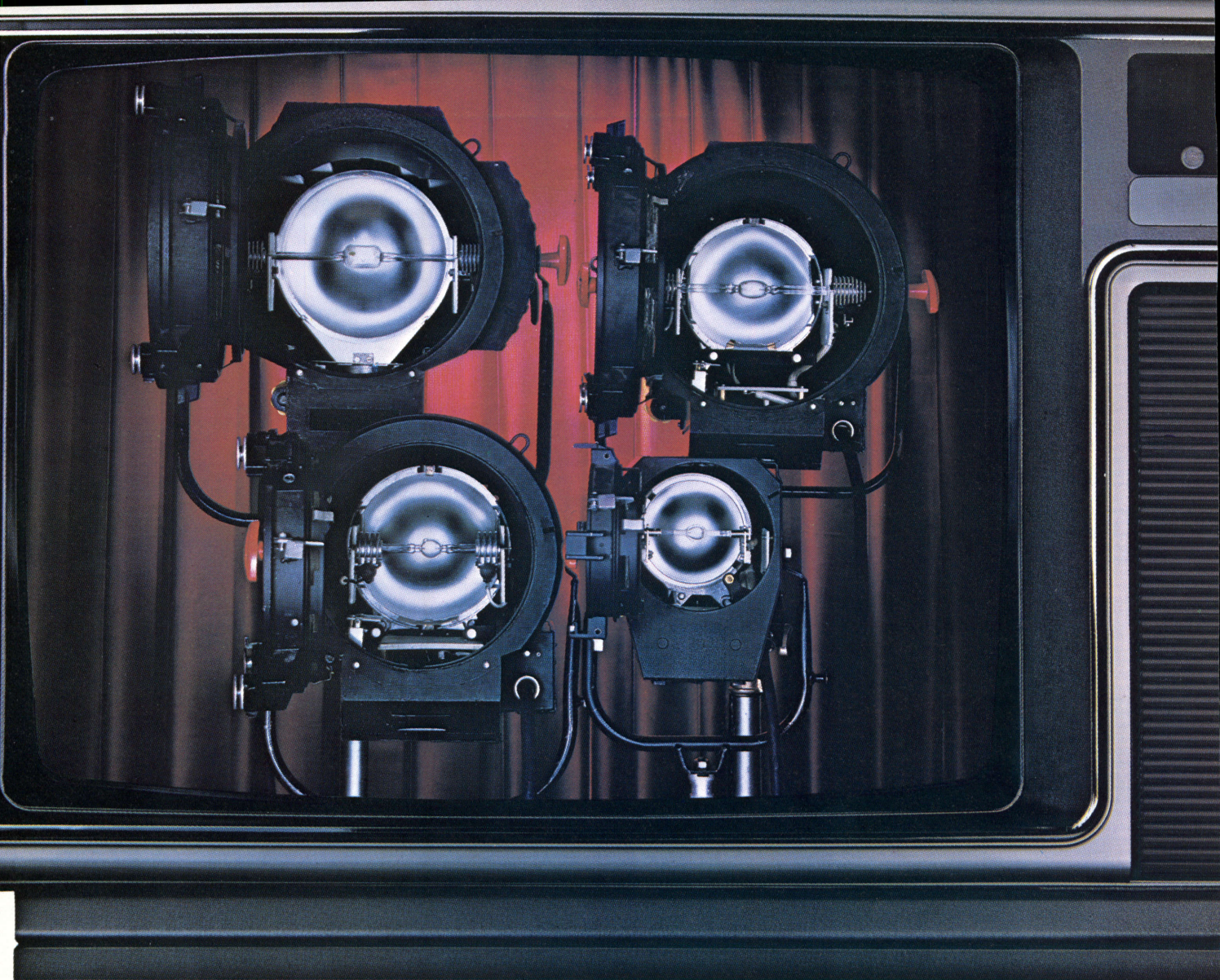
until after the war, in April of 1946, that they united to form the present-day Tiffen Company. The beginnings were modest. The small facility in Brooklyn, NY, housed only three employees; Nat, Sol and Leo. Over the next two years business in-

Continued on Page 165



(LEFT) The fine grinding process brings the filter to its precise finish dimensions and flatness. (RIGHT) Nat Tiffen (in background) supervises as these large polishing machines create a smooth optical finish on the filters. (BELOW LEFT) In addition to precise scientific measurements of density and color, visual inspection follows every step of manufacture. Here in final inspection, each filter is carefully scrutinized before it can be packaged. (RIGHT) Tiffen maintains an extensive inventory. There are usually more than 15,000 filters in stock and the company currently manufactures 1½ million filters a year. (Photographs by ANTON WILSON.)





Introducing a showbiz family that maintains its ratings for life.

Sylvania Brite-Arc™ studio lamps are taking center stage for their long-running performance in film, theatrical and television applications. They maintain daylight color temperature throughout their rated life.

And they perform with high efficiency, too. Up to 92 Lumens/watt. That's about

four times the efficiency of standard incandescent or tungsten halogen lamps.

A medium-arc-length light source, Brite-Arc lamps come in 575, 1200, 2500 and 4000 watt ratings. They're designed for follow-spot, broad and Fresnel applications. Because of cooler operating temperatures, Brite-Arc saves costly en-

ergy used to run cooling equipment. And high light output per lamp means fewer fixtures are required.

For full information on Brite-Arc lamps or any other member of our full line of studio lamps, write or call Sylvania Lighting Center, Danvers, MA 01923. Phone: 617-777-1900 Extension 2650.

SYLVANIA

**Industrial/Commercial
Lighting**

GTE

BEHIND THE CAMERA ON "HEARTBEEPS"

Continued from Page 125

ROSHER: You have a problem in photographing human beings with robots because of the differences of reflectivity in the respective "skin tones". The robots' faces have metallic surfaces which are more highly reflective than human skin. They have a brilliance to them, a sort of self-contained illumination, which means that they really have to be photographed by eye. You can't take a reading and believe that reading, because you are dealing with reflective surfaces and reflected light.

QUESTION: What kind of filtration did you use in photographing HEARTBEEPS?

ROSHER: We shot the picture completely clean. We didn't use any diffusion because the angles of the masks that the robots were wearing tended to create an appearance of soft focus. Once you would put a little too much diffusion on you would start losing the definition of the angles of the faces. The image would start to blur and get very confusing. So we protected ourselves by shooting it clean.

QUESTION: I noticed when I visited the

testing area for the robots that you were using an overhead, diffused sort of lighting that created a kind of comic strip effect—very appropriate to the subject—but in other sequences, what sort of lighting styles did you use?

ROSHER: The reason for using the overhead type of lighting in the testing area set was to keep the mood very clinical and very high key. It's kind of a shake-down area where they check the performance of robots for sale, so they wanted an open, high-key value in the set where everything could be examined properly. They want to see what these particular robots could do. In many cases, in this film, we were shooting in the deep woods during late afternoon when there is a lot of golden light, dappled light. Down in the bottom of the woods the light ranged from T/2.3 to T/8 and we photographed Aqua and Val in that speckled light.

QUESTION: Can you tell me about your night-for-night shooting?

ROSHER: At night I used a lot of cross-lighting, a lot of directional light. For a moonlight sequence, shot at Disney Ranch, we created our own moon. There's a sequence in which they all go out to the lake and we built our own six-foot moon and hung it from a cherry-picker on the other side of the lake above the trees. We put some light on it so that it would look like the real moon suspended up there. Two of the robots come down to the lake and have a discussion. There are lily pods on the lake and dry ice in the water. Then the crane goes right across the water with the camera holding the mist from the dry ice in the foreground. It's like a fairy tale—or a cartoon. I'm not sure which it is, but it feels more like a fairy tale than anything else.

QUESTION: What about so-called "effect" lighting?

ROSHER: We had flickering firelight effects in the cave where they made love. We had sunset effects in interiors, shooting with MT2s and hard light. Then we had soft light interiors—window light with silks diffusing directional lights. When we were outside at night we used basic directional light, such as cross-light and back-light. At times we would integrate bounce light from cards with directional light—a mixture of the two in the same scene.

QUESTION: What would you say was
Continued on Page 172



Spitting flame like a modern-day dragon, CrimeBuster rampages through the streets of a small town at night. Because the vehicle is black, it was difficult to photograph at night. Careful lighting and selection of camera angles to maximize reflectance of its shiny black surfaces kept it from falling into the background. (BELOW) Pursuing the runaway robots, CrimeBuster creates havoc in the junkyard.



TALKING TECHNICALLY

By DAVID W. SAMUELSON

KNOWING THE ROPES

Of all the subjects dealt with in all the manuals of filmmaking, the technology of getting the gear from point A to point B receives scant attention. Maybe the authors think it so boring that no one would bother to read about it, or that it is so obvious that everyone is born knowing how to do it, or that someone else always has the responsibility for moving the tools of our trade about. It cannot be that it is not important.

Let's talk about casing first. In my young days, cameras were packaged in beautiful real leather cases and located within by velvet-covered wooden blocks. The worst that could happen then is that they might be dropped from a railway carriage to the platform below. Today they are just as likely to be dropped from the height of a jumbo jet cargo hold, and they have to be packaged accordingly, whether a case is made of aluminum or plastic-covered wood, the camera and lenses inside it nowadays are likely to be immersed in a remarkable material called Ethafoam. Ethafoam is firmer than foam rubber, so does not bottom out if compressed, does not absorb moisture even if a case is left open in the rain, can be cut to shape with a sharp knife, does not become dog-eared with constant handling and, above all, is feather light.

Moving equipment from one country to another has become a very familiar exercise for many filmmakers and often on a small unit it is the crew themselves who have to do things right. They may well have a freight agent see them off at London or Los Angeles airport, or wherever, but when it comes to crossing the border between, say, France and Spain in a rental car in the middle of the night knowing what to do counts.

About 40 major countries in the world are members of the International Guarantee Chain which recognises the "Carnet Du Passage en Douane for temporary admission". A Carnet is a sort of passport for high-value goods which would otherwise attract duty and tax wherever they go. It is a very official document valid for 12 months issued against a deposit of money sufficient to pay the duty or tax in any

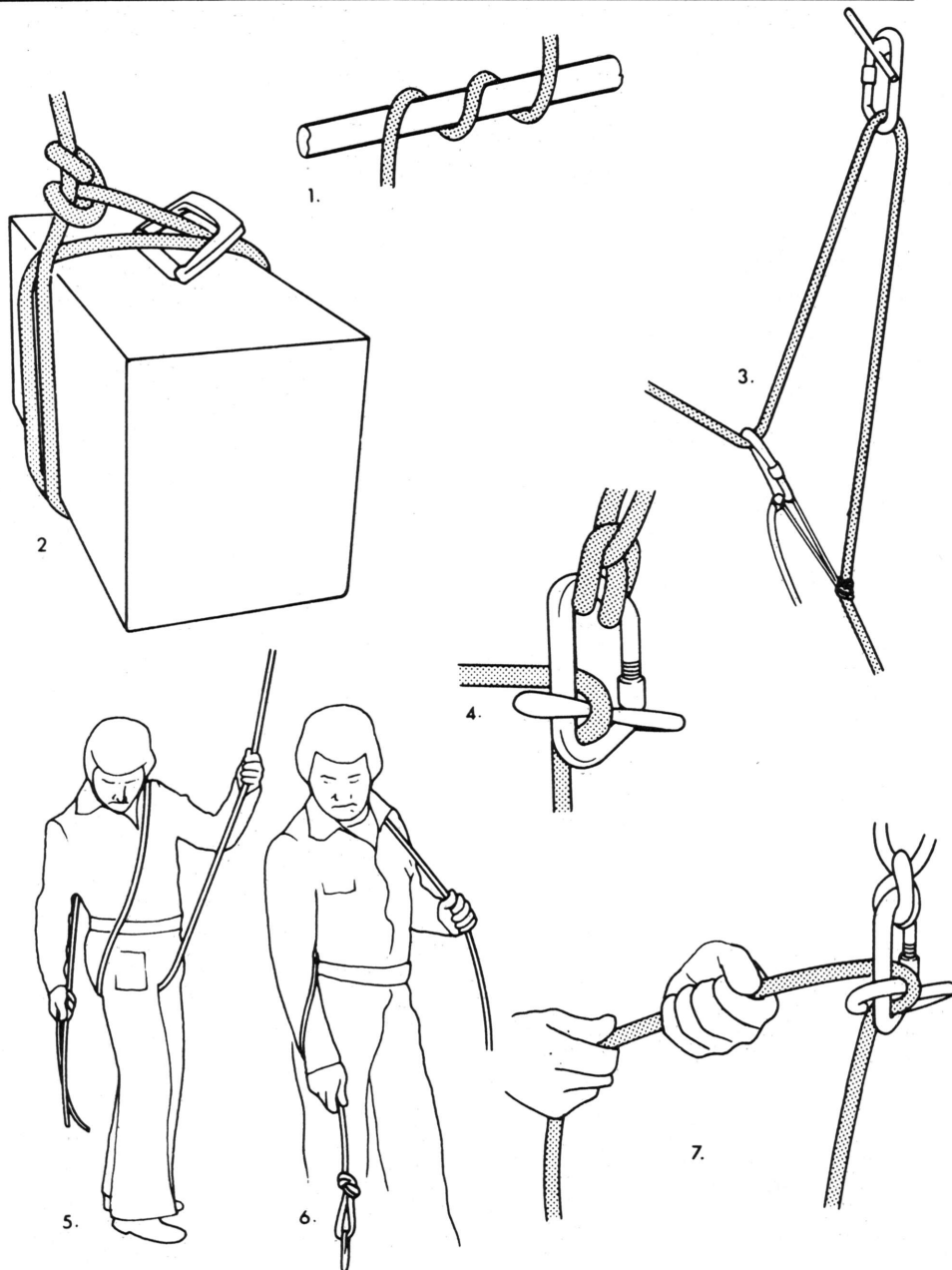
country should the equipment not be returned to the country from which it started out, and the Carnet document not returned to the local Chamber of Commerce within 19 months of issue.

In the United States, Carnets are issued by the U.S. Council of the International Chamber of Commerce Inc. of New York and in the U.K. by the London Chamber of Commerce and Industry. Carnets may be used whether the equipment is shipped through brokers or taken by an individual

as accompanied baggage.

Before a Carnet is issued, a "shipping list" must be compiled detailing every item of equipment to be transported, together with serial numbers (where applicable), countries of origin, and values. Every package, case or box must be sequentially numbered and the list drawn up detailing sizes and weights. Once drawn up, neither the list nor the goods themselves may be altered. Thus, all the equipment

Continued on Page 194



ROPE TRICKS: 1. Rope passed three times around a horizontal pole to give extra friction; 2. Correct way to tie a rope around a case; 3. Two Karibinders used to make a pulley to lift a heavy weight; 4. Two Karibinders used to apply friction to a rope; 5. A means of lowering a person by himself; 6. Correct way to lower a heavy weight; 7. Ropes should be passed hand over hand and never allowed to slip.

NOTE TO CLASSIFIED CUSTOMERS

Rates for classified ads will increase effective with the February 1982 issue. Please send payment with ad at 60 cents per word for light face; 80 cents per word for bold face or caps. Include \$3 extra for blind ads.



DIRECT FROM DENVER

CINEMA PRODUCTS: FOR SALE OR RENT

We can put you in a Steadicam™ or any Cinema Products camera or accessory. Direct from Denver. No problem.

Denver has the best, most centralized and direct shipping service available. Which means wherever you are, renting or buying film or video equipment from Film/Video Equipment Service Company in Denver saves transit time, shipping costs and the worry and expense of delayed production schedules due to carrier transfer error.

Film/Video Equipment Service Company is an exclusive Mountain States dealer for all Cinema Products film and video equipment and accessories. CP-16R and the state-of-the-art GSMO film cameras. MNC-71CP ENG/EFP

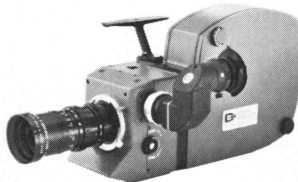
video cameras. And recorders—the ¾ inch JVC 440LU or one-inch portables. All you need for single or multi-camera shoots—the digital CP coaxial control system, HMI lights, Steadicam™. Plus the CP U/F-16 Upright Flatbed Editing Console. We have it all, for sale or for rent.

Plus we service what we sell, in our shop or on location. Factory trained and authorized, with over a decade of experience. We can train you on the Steadicam™ in Denver or on location. Or we have experienced operators available.

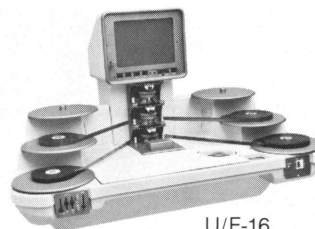
So when you think of Cinema Products, think of Film/Video Equipment Service Company. Call for our competitive rental rates and ask about our rental rebate plan. We can put you in Cinema Products equipment. Direct from Denver. No problem.



CP-16R



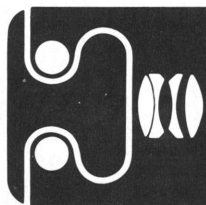
GSMO



U/F-16

**RENTAL
SALES
SERVICE**

1875 S. Pearl, Denver, CO 80210
(303) 778-8616



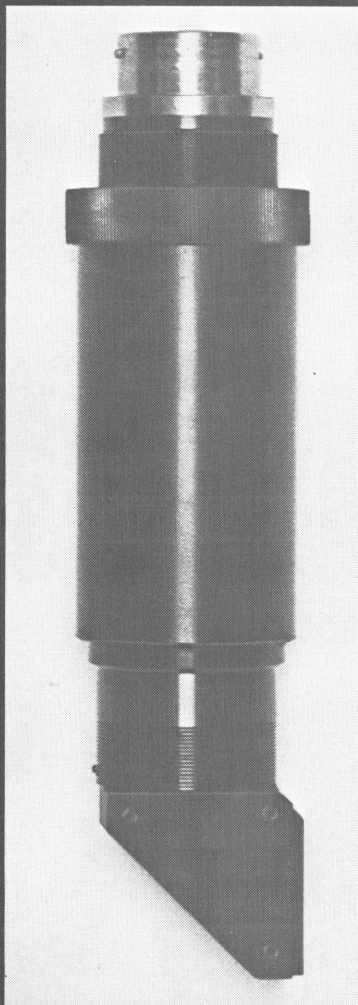
**FILM/VIDEO
EQUIPMENT
SERVICE
COMPANY**

new

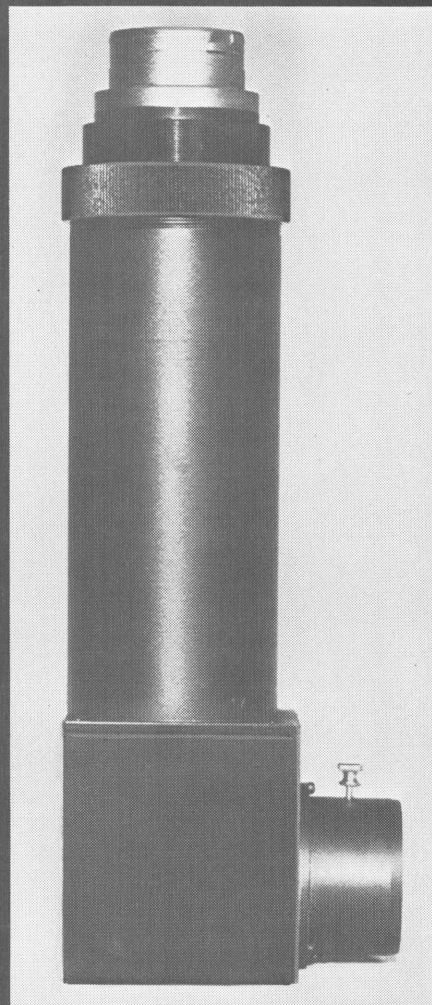
SNORKEL

LENS *by Hajnal*

16mm- $\frac{2}{3}$ " Video



35mm-1" Video



Let your imagination soar! You'll be astonished at what you can do with the Hajnal Snorkel—and how easily you can do it.

Two new, improved models of the patented Hajnal Snorkel lens are now available from F&B/Ceco. Optical performance has been increased, mounting made more versatile, plus—the new lenses have a recommended minimum aperture of T4 with ASA 100 Film, and most video tubes. And you can stop down the prime lens diaphragm from T4 to T22 without any vignetting.

Type 16 accepts "C" mount prime lenses and mounts into 16mm film or $\frac{2}{3}$ " tube video cameras. Type 35 accepts Arriflex prime lenses and mounts into 35mm film cameras or 1" tube video cameras. Both Snorkels will accept extreme wide angle to telephoto lenses and zooms. Camera end mounts are available for most popular film and video cameras.

The Hajnal Snorkel story is too exciting to be told on one page. Write for our illustrated brochure for all the details and let your own imagination go to work.

F&B/CECO

U.S. Patent #4195922 and others in foreign countries.

SALES—SOS DIVISION

315 West 43rd Street, New York, N.Y. 10036 Phone: (212) 974-4600 Telex: 12-5333

THE NEED FOR SHOOTING FLEXIBILITY

By EDWARD LACHMAN, JR.

As a cinematographer who moves back and forth between the documentary and feature film fields, I'm constantly aware of the cross-overs in the application of technique and style.

Though the state of art in photography is more advanced now than it ever has been in the short history of photography and cinematography, in image reproduction, be it on film or tape, photography becomes a process of image deterioration from the moment the image is transferred by light through the lens to the moment of truth when the developed film projects out on the screen. The original image has been transformed by many factors that can add to or cut down the amount of image deterioration.

Three Factors

As an image maker, I'm always concerned with minimizing and controlling image deterioration. There are three factors that affect the quality of an image: 1) the film stock, 2) the laboratory processing and 3) the camera and lens used. In all three areas I would shoot comparative tests to find the optimum quality.

There are many reasons for shooting in 16mm—production costs and size and flexibility of equipment—which especially apply to documentaries and small budgeted films. The problem for a cinematographer when shooting in 16mm is not always knowing if the project will end up in theatrical distribution, in which case it would have to be blown up to 35mm. If one had the option from the beginning with a 46% increase in picture area with Super-16, knowing you were going to blow up to 35mm, you should go the route of Super-16.

I would recommend Super-16, then, provided that your camera can be set up (as the Aaton can) and it only amounts to a simple conversion—and also if you have access to a lab capable of handling Super 16 and can locate suitable editing equipment.

But one of the problems a cinematographer faces is not always knowing if the film will be blown up to 35mm for theatrical distribution. So one should work from the beginning with the thought that the project may end up in a 35mm blowup, which brings me back to the third point of the importance of having your camera and lens properly collimated to within the closest tolerances.

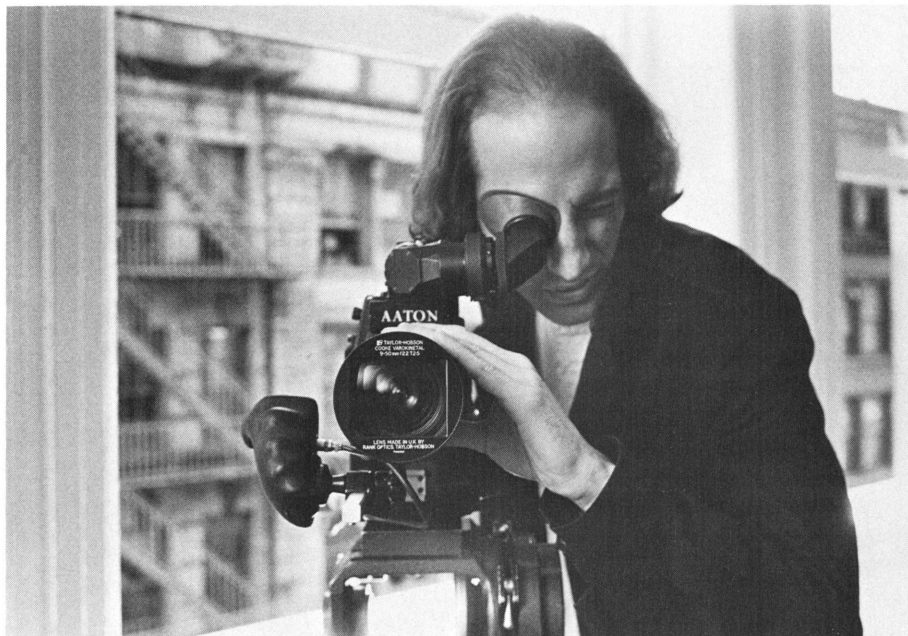
Equipment

After the lens and camera have been

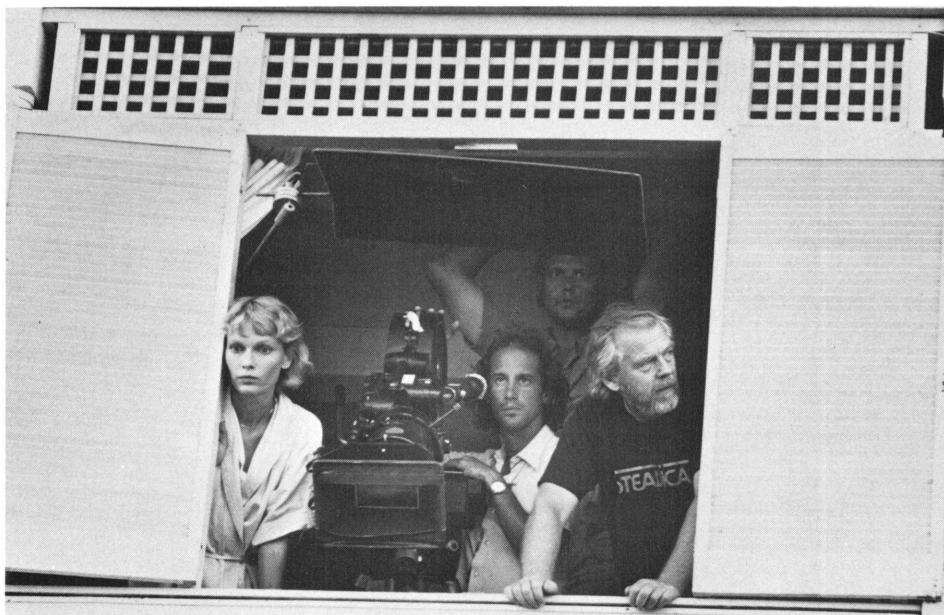
set on the bench and against film running in the camera, you should make tests and look at the results on film. That's where it counts. But after you're satisfied with the proper collimation of the lens and proper setting of the camera, your images can only be as good as the lens you're using, and in 16mm and 35mm productions, I'm always trying to achieve 35mm type imagery in 16mm. In 35mm I like to use prime lenses or a zoom lens as a prime lens. American cinematographers are all famil-

iar with the quality of the 35mm line of Cooke Speed Panchro prime lenses and performance. They were as dismayed as I was when these were discontinued, but in Europe, Rank introduced first the 20mm–100mm 35mm Varotal zoom and then the 25mm–250mm Varotal zoom, which are becoming widely used here now. I consider them the best zooms in 35mm on the market for contrast, resolution and flare factor.

Continued on Page 195



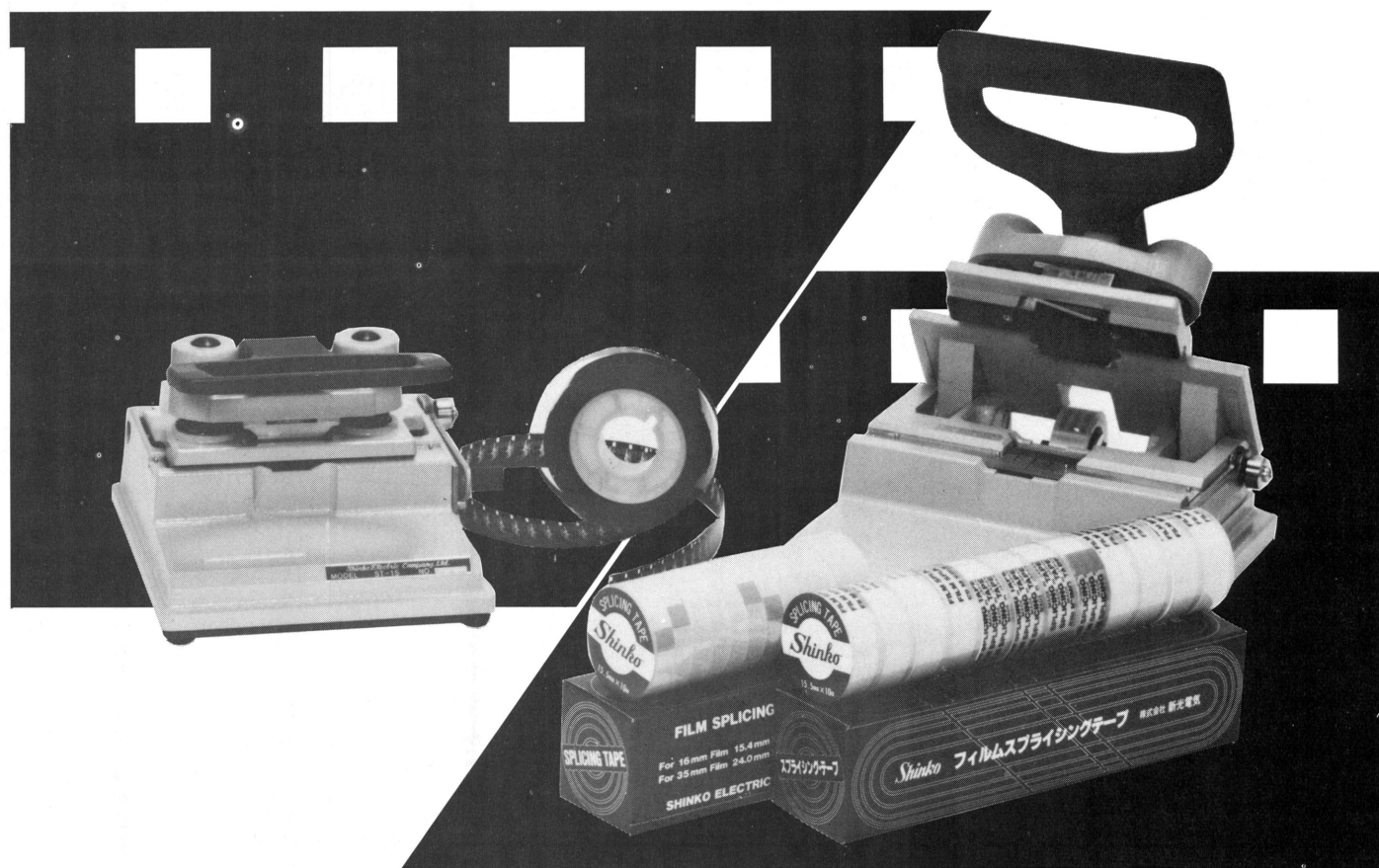
Cinematographer Edward Lachman, Jr. lines up a shot with the Aaton 16mm camera, which has been adapted to Super-16. He recommends this format when the film is to be blown up to 35mm for theatrical release, because it provides more than 40% additional image area. (BELOW) The author behind the camera on *THE HURRICANE*, with Sven Nykvist, ASC (right) as Director of Photography and Mia Farrow as female lead.



"THE PROFESSIONAL" FILM TAPE SPLICERS AND SPLICING TAPES FROM SHINKO

THE PRECISE CUT FROM A QUICK AND SIMPLE OPERATION

From the first time you handle our FILM SPLICERS we guarantee the "Professional Cut" which you always need. No worry about any mishandling... Easy Operation gives you the super cut each time you splice any one of the 8mm, 16mm or 35mm films. Simply place the film over the sprocket pins on the recessed splicing bed, pull the tape across and lower the lever—That's all the effort you need for an accurate, precise "Professional" splicing job.



THE BEST FILM SPLICING TAPES IN THE MARKET

Shinko's "High-Clear" Film Splicing Tapes are produced specially for Film Operations and enhance all of the Best Qualities available at present technology. Along with its Sure Tensile Strength, Thin Adhesive Agent make our Tapes Dust-Proof and Long-Lasting. Moreover, to make your tapes exclusive, we can privately label them with your name.

HIGH-CLEAR SPLICING TAPES COMES IN THE FOLLOWING SIZES :

1. 8mm 10m × 8.4mm (Frame Line to Frame Line)
2. 8mm 15m × 8.4mm (" ")
3. 16mm 10m × 15.3mm (" ")
4. 16mm 15m × 15.3mm (" ")
5. 35mm 10m × 24mm
6. 35mm 15m × 24mm
7. 35mm 10m × 38mm (Frame Line to Frame Line)
8. 35mm 15m × 38mm (" ")

Shinko

SHINKO ELECTRIC CO., LTD.

11-2, 4-Chome, Soto-Kanda Chiyoda-ku, TOKYO, 101 JAPAN

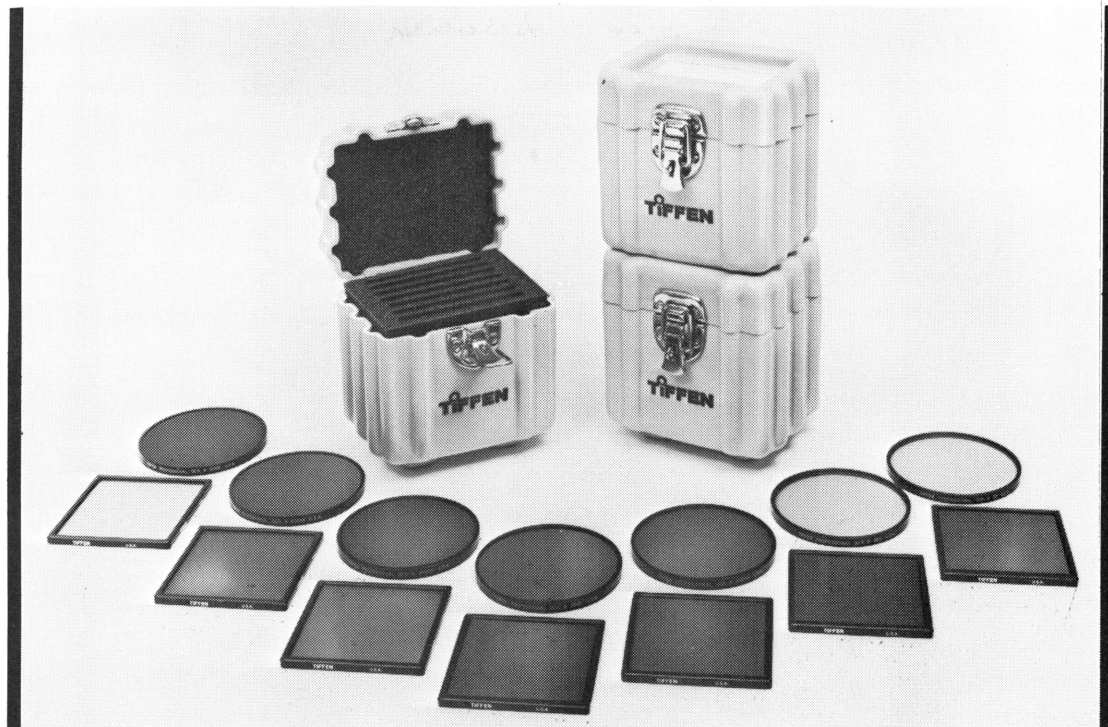
PHONE: 03-253-8741

CABLE ADDRESS: CINE SHINKO

TEL: 03-253-8741

manufacturer

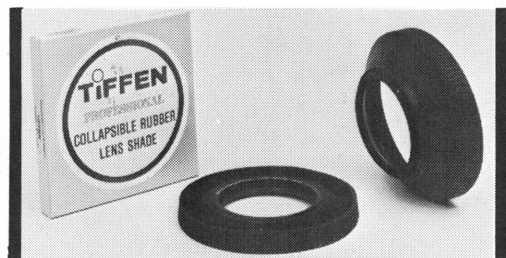
Tiffen Hi-Impact Stackable Filter Case.



It's a compact carry case. It's a filing system. It's a stacking unit. It's the unique new space-saving way to carry and store your filters safely. Outside: Super-tough, ribbed ABS virgin plastic. Inside: A 4 lb. hi-density foam insert with individual slots to hold, support and protect seven Series 9

or seven 3" x 3" filters, in any combination. Spring latch with finger size lever for ease of opening. Provision for lock and key. Bright yellow—easy to identify, easy to handle, hard to lose. Recessed top and legs make it easy to stack. Pressure-sensitive wipe-clean reusable label. Stock No. 933

Lens accessories.



86mm—Series 9 Universal Rubber Lens Shade

Compact—smaller in diameter than wide angle rubber lens shade. Collapsible for easy storage. Designed from a special rugged rubber compound for heavy-duty use to withstand extremes of weather from tropic heat to freezing cold. Can be used on normal or wide angle lenses.



4 1/2" "Mini" Collapsible Lens Shade

Same diameter as the Tiffen 4 1/2" metal lens shade (outside diameter, 5.475; length, 1.375)—with the important added feature of collapsibility. Can be used on normal or wide angle lenses. Made of specially formulated high quality extremely durable rubber for use in all weather conditions.

Fractional Filters Now Available:

1/4, 1/2 Density Low Contrast Filters Available in all sizes. 1/4, 1/2 Fog Filter Available in all sizes.

TIFFEN®

Write Department AC for New Professional Brochure and Price List.

90 Oser Avenue, Hauppauge, New York 11788 (516) 273-2500, Telex 96-7748

Next time your accountant says you can't afford Cinetron quality, show him this.



It's a well known fact that Cinetron builds the finest

computer animation equipment money can buy. They don't give Academy Awards to companies who build anything less than the best.

But we didn't win that recognition for building the finest piece of equipment. We won it for building the finest line of equipment.

And what most people don't realize, especially the green eye-shade set, is that you don't need a Hollywood budget to put Cinetron's award winning equipment to work for you.



Even our simplest machine is far superior to anything else in its class.

And it has also made quite a mark in the motion

picture industry.

First of all, it's a true digital computer, but simple enough for anyone to use. It's all push button controlled. You don't even have to know how to type.

It has precision controlled motors which assure that the accuracy and infinite repeatability aren't lost before they reach the screen. Smooth, predictable inverse

sine speed tapers gently ease all acceleration and deceleration moves to life.

Plus, all Cine-

tron systems will run practically any kind of equipment. You don't have to go back to your man with the calculator for an expensive new animation stand or optical bench.



But more than that, Cinetron realizes that if your business grows the way you hope, your computer animation

needs will grow, too. And our simple equipment can be made to solve more sophisticated problems as your needs expand.



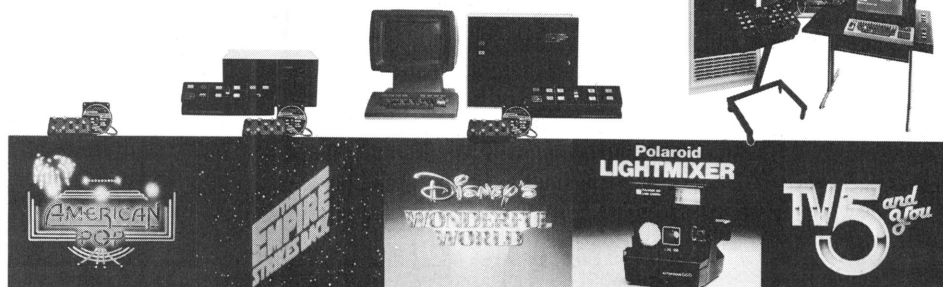
That means you can upgrade our most basic model to make it our most prestigious.

So, call us at 404-448-



9463. We can give you the fine equipment that will make you happy. And

when you show the price to your accountant, it might be the first time you'll have seen him smile in years.



Consider: Cinetron equipment at all levels of sophistication has helped bring the ooo's and ahhh's to some of the most popular films and television shows in recent history.

Cinetron Computer Animation Equipment.

The best you can buy. Until we make something better.

Cinetron Computer Systems, Inc./6700 I-85 North/Norcross (Atlanta), Ga. 30093

QA &

SPONSORED BY
PROFESSIONAL MOTION PICTURE EQUIPMENT ASSOCIATION



This organization's membership is made up of manufacturers and dealers throughout the world. Direct all Q&As to AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, CA 90028.

This month the Question and Answer column has received a number of questions regarding lighting. This appears to be a very popular topic and one that every filmmaker knows to be an important part of good cinematography. Although there is some duplication in the following questions, we felt it important to run them verbatim.

Q We are working with a lighting grid of 16 each 500-watt Fresnels, run through a dimmer board. The lamps are rated at 2900°K for economical reasons. We would like to use this system for color film and color video application:

1. Should dimmers always be used at full output to maintain color temperature?
2. Will Booster-Blue gel adequately correct 2900°K lamps to 3200°K?
3. If we boosted the 2900°K lamps to 3200°K, will that temperature be adequate to shoot Kodachrome 40, which is rated at 3100°K?

A 1. Yes, use your dimmers at full output, excepting for special effect. Dimming the front lights will reduce color temperature, and faces will "go red".

2. Yes, Rosco ¼-Booster-Blue gel will effectively raise color temperature by 300 degrees (i.e. 2900°K to 3200°K).

3. Depends upon how critical you are. Faces will tend toward the warm side with Kodachrome 40 under 3200°K illumination, but some people like the effect. Otherwise, use of ½-Booster-Blue gels on your 2900°K lights will get you closer to correct color.

Q I have a lighting requirement in a short sequence that calls for lighting intensities to change rapidly and smoothly. Since I cannot color my 3200°K lamps, I am concerned about dimming my lights electronically and maintaining color temperature. Can you fill me in on what happens to color temperature with lights on dimmers?

A Today's electronic dimming controls alter the voltage to the lamp fila-

ment. The amount of voltage does not proportionally change as the control setting does. The following chart illustrates how the Kelvin temperature changes in relation to the dimmer setting.

DIMMER SETTING	@VOLTS INTO DIMMER	3200°K BASE
10	117	3170
9	112	3120
8	104	3040
7	96	2960
6	88	2880
5	80	2800

You can visibly see only ½ light output, but still have a color temperature of 2800° Kelvin. This is a 50% change in visible light and only a 10% change in color temperature. The other characteristics desired, such as smoothness of transition and crisp lighting effects, are attained through the control console which can be computerized or manually operated.

Q When shooting scenes including practical lights within the frame, how do you avoid lens flares?

A To avoid lens flare or "blooming" of practical lights within a scene is a matter of adjusting the relative brightness of the practical light to the overall illumination. Almost always, it is a matter of reducing the intensity of the practical lights. This can be done in several ways:

1. Loosely wrapping one or more layers of Rosco Tough-Spun or Tough-Frost material around the practical bulbs will often suffice.
2. Use of lower wattage bulbs, such as 40-watt or 75-watt household bulbs. (These burn at approximately 2900°K, and, therefore, might look best if wrapped with Rosco ¼-Booster-Blue gel material.)
3. Reduce the voltage of the practical lights by running them through a variac, until you have a good balance. (This, again, will lower the color temperature, a ¼ or ½-Booster-Blue gels may be needed for color balance.)

We encourage you to send us your questions on cinematography, as well as questions on the technical use of motion picture equipment. All inquiries will receive our prompt attention. ■

The Clamp For All Occasions *The Mafer Clamp*



A uniquely designed clamp system for mounting studio and location apparatus to almost anything.



Matthews Studio Equipment, Inc.
2405 Empire Avenue
Burbank, California 91504
(213) 843-6715 or 849-6811
Telex: 691599 (MATTHEW)

Europe
Middenweg 49b
1394 Ad Nederhorst Den Berg,
Netherlands
(2945) 3988
Telex: 10254 (GRIMA NL)

Visit our Booth, #2626, at the 1982 NAB Convention in Dallas, April 4th thru 7th.

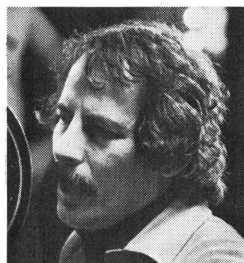
If you process your film with Chem-Tone, you're in good company.

"I've used TVC successfully for several years. I know I can depend on the people there. They care about my film."



Fred Levinson

Fred Levinson and Company

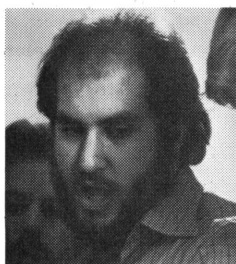


"Wherever I'm shooting, I feel as though TVC is right there. I like their work and I like their attitude."

Lou La Rose

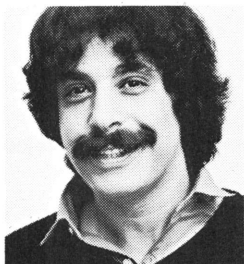
Director/Cinematographer, La Rose Production, Ltd.

"100% of 'Maniac' was Chem-Toned. That saved us a ton of money."



Bill Lustig

Director/Producer "Maniac"



"You could say that the Chem-Tone process was absolutely essential to this film."

Ira Wohl

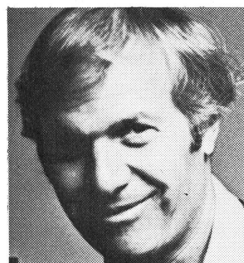
Director "Best Boy"

"At TVC the quality control is beyond reproach."



Jimmy Collins

*Director/Cinematographer/Jayan Film Productions
Atlanta*



"In an industry noted for its variables, one thing never changes. TVC's consistent excellence."

Leo Lebowitz

Director/Cinematographer

Only **tvc** has Chem-Tone

tvc laboratories, inc., 311 west 43rd street, new york, new york 10036 (212) 397-8600

CLOTHES ENCOUNTERS OF THE FILMING KIND

By JON FAUER

Clothes may not make the cameraman, but they certainly have a lot to do with whether he ends up miserable or comfortable on location

"You camera operators carry enough gear to survive a direct nuclear attack," my wife observed recently.

She was staring at my JanSport duffel packed with clothing and supplies for the day's shoot, capable of sustaining life under virtually any weather condition imagined, predicted or omitted by the 6 O'clock News.

Some films can be done in a pair of sneakers and designer shorts. Other jobs involve numerous set-ups in a day; freezing aerials, dangling cliff-hangers, wet-suits and water work, dramatic down-pours, sweltering interiors. It helps to come prepared, and to remember what Murphy said: "Mother Nature is a Creep."

On winter features the camera truck looks like the combined showrooms of many expedition outfitters, representing more down feathers than the last seven migrations of Prime Canadian Geese.

A few months later, this same gear might have to be squashed into one rucksack for a trip to the Arctic. Inevitably, the best dressed plans will be thwarted by the producer needing "just a couple of extra shots along the way—" in the Amazon jungle.

Recent developments in outdoor clothing which is versatile, comfortable and compact bring us closer to the ideal location threads enabling us to shoot anywhere in the world, under any condition—like an Arriflex camera, with just one change of socks.

Since we still need more than a change of socks to survive the hostile environment, here is a survey from the latest camera crew fashion show.

FEET. Feet are very important. In the good old days, everybody who was anybody wore desert boots or cowboy boots. Unless you are re-shooting *LAWRENCE OF ARABIA* or kicking lizards out of corners, chances are good that you are now wearing expensive, high-tech running shoes. Fortunately, they come in a wide variety of colors, which makes it easy to tell one department from another without lifting your head.

Avid readers of this magazine and devoted students of fashion will remember my ubiquitous blue Adidas SL 72's from an equally ubiquitous tripod ad, in which camera and tripod seemed permanently fused in blissful, if not humorous, synergy. These sneakers were comfortable—but they were hideous. They seemed to be in perpetual motion even when standing still.

Continued on Page 164



Some jobs can be done in a pair of sneakers and designer shorts. Filming on *I, THE JURY* are (left to right) camera operator Jon Fauer, Director of Photography Andrew Laszlo, ASC, and assistant cameraman Bill Coleman. (BELOW) Other jobs require the down feathers from the last seven migrations of prime Canadian geese. Drinking frozen champagne on the Arctic Ice Cap near the North Pole are (left to right) assistant cameraman Peter Bagger, cameraman Jon Fauer, Director of Photography/director Peter Henning and soundman Mike Lonsdale.



"CHALLENGER"—ANATOMY OF AN AWARD WINNING DOCUMENTARY

By MICHELLE BOGRE

How a 30-year-old free-lance filmmaker from Montreal pursued an idea which resulted in a documentary film that has won an armful of awards

It was a small item in the newspaper about an aircraft company that had marketed and sold 40 executive jets of a new and innovative design. The catch was that Canadair had presold the planes, to be called "Challenger," before even one had made it off the drawing board and into the air.

This news item of an industry in progress piqued the interest of Stephen Low, a 30-year-old free-lance filmmaker in Montreal. Although Low had never directed a major documentary or feature film, he approached management at Canadair about producing a serious documentary tracing the aircraft's development. To Low's surprise and delight, Public Relations Director Beneoit Kerub immediately said, "yes."

The resulting hour-long color film, "*Challenger: An Industrial Romance*," has won many awards, the most recent of which is a Best of Show Award in the 1981 competition sponsored by the Information Film Producers of America (IFPA) as well as a Gold CINDY in the documentary competition.

"*Challenger*" is a serious documentary about Canadair, a company at the financial brink that undertakes a 200-million-

dollar gamble by designing and manufacturing a new type of executive jet with innovative wing design, new technology engines and the widest body in the industry. The film, which traces the aircraft's one-and-a-half-year development, documents the disparity between the desires of marketing and the realities of engineering, and how strong leadership, teamwork, risk-taking and problem-solving can merge the two.

"Building an airplane is a great vehicle for a dramatic story because the drama is inherently simple," says Low. The audience knows from the beginning why it is there—to see the plane fly. So as a filmmaker, you can do many things with the audience as long as the plane is progressing, and viewers get something to nibble on."

The hour-long version was originally intended for television release and use as a business training film in Canada. A half-hour version was subsequently edited for release in the United States. The National Film Board of Canada handles all distribution.

Because the making of the "*Challenger*" is an industrial story, Low had to tread a thin line, and avoid making what

might be mistaken for a public relations film.

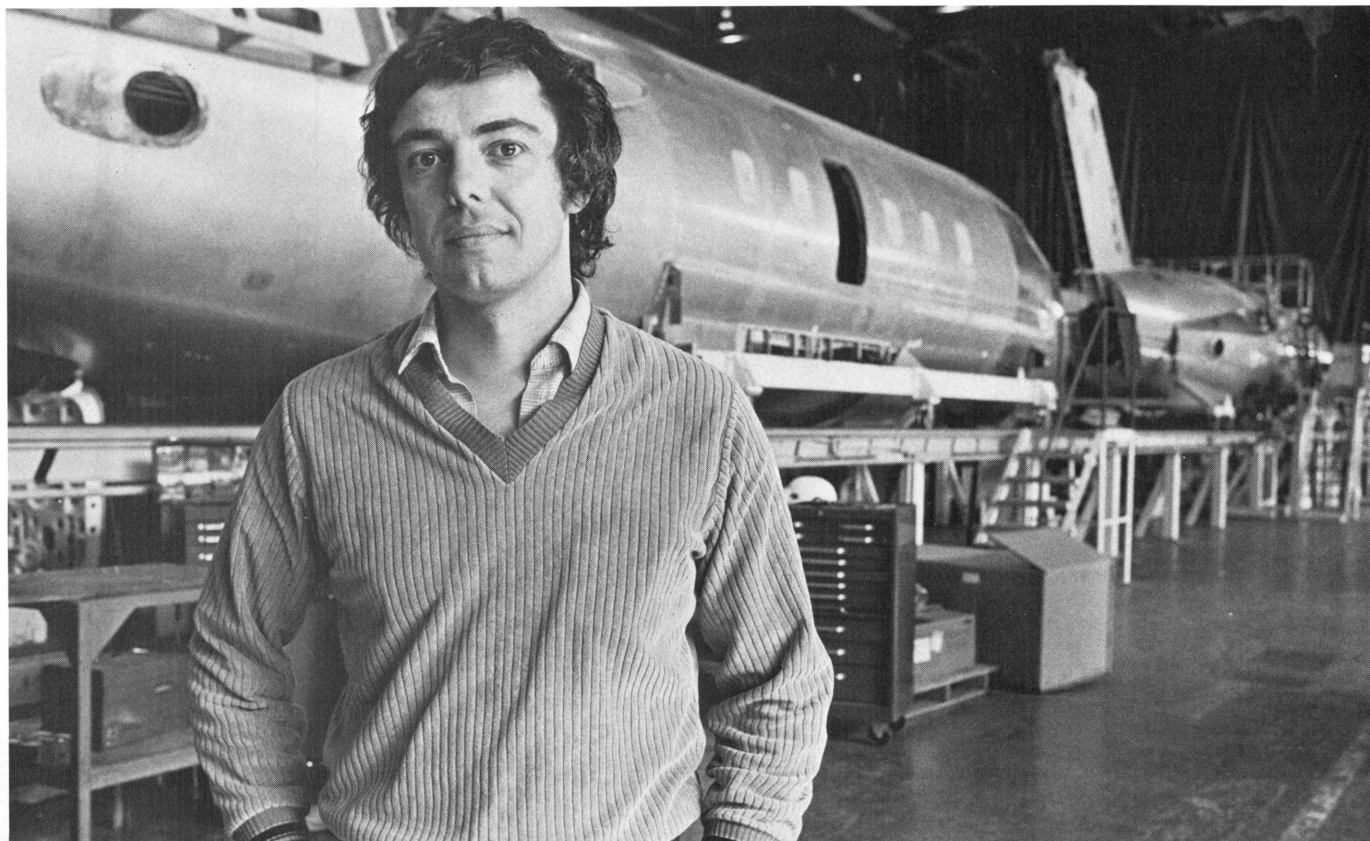
"Television viewers are sophisticated," says Low. "As soon as they smell a public relations bias, the game is over and television sets start turning off. Management at Canadair was keen on the idea of prime-time exposure and was able to see through the potential pitfalls. They let us in for a year of *carte blanche* filming, and that's partly why we were able to make such a good film."

While Canadair's management was eager to cooperate, it took Low a year to raise money for the \$300,000 budget. Finally with the encouragement of Roman Kroiter, from the National Film Board, and Canadair President Fred Kearns, the Canadian Department of Industry, Trade and Commerce decided to fund the film. The National Film Board sponsored the film and provided crews and work space. Kroiter became executive producer.

Low occasionally had a second-unit camera, but most of the filming was done by Film Board Cinematographer Andreas Poulsson.

"Poulsson is one of the Film Board's best *cinema verité* cameramen," says Low. "He has an uncanny knack of know-

Stephen Low, a young filmmaker from Montreal who had never directed a major documentary or feature film, conceived the idea of producing a documentary about production of the Challenger, a new and innovatively designed executive jet. When Canadair, the company that manufactures the plane, agreed, the National Film Board of Canada sponsored the film. The filming of CHALLENGER involved a combination of techniques, including *cinema verité*.



ing where the action is going to take place before it happens. He always has his camera on the most important action in a group scene."

The filming of "Challenger" involved a combination of techniques, including *cinema verité*. Low wanted to give the film a "feature" look with good camera movements, using dolly shots, cherry pickers and roof cranes. The smooth flat floor of the aircraft factory made smooth fluid camera movements easy, he says.

Many of the scenes, including marketing and engineering meetings, although they appear to be *cinema verité*, are actually recreated situations where participants ad lib the dialogue. These synch sound situations are combined with a voice-over narration, written by Low.

"We tried to make the film as dramatic as the real story," says Low. "I combined synch sound with voice-over commentary. The commentary, which handles the facts and steers the story, gave us the freedom to be less precise with the synch situations.

"The great thing about documentaries is that you can be freer with people," he continues. "We didn't script any of the recreated scenes. We primed the people and tried to get them excited about the filming. I would give them a conflict to toss around, or remind them of an argument that had occurred. When people become emotional, camera self-consciousness disappears."

For meeting situations, for example, Low would set up the situation and instruct the "actors," while Poulsson, using an Eclair NPR camera mounted on a tripod with retractable wheels, would move around the room, focusing on action and emotions.

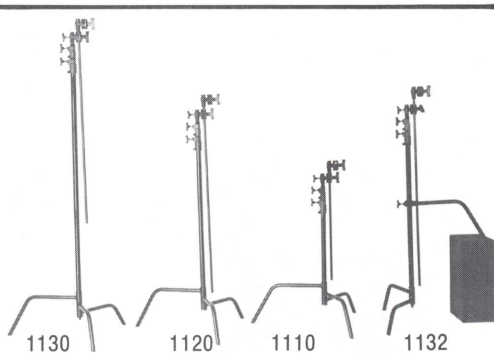
Most of production was done with the Eclair camera, Angenieux and Zeiss super-speed lenses and Eastman color negative II film 7247. For the factory scenes, Low relied on the inherent latitude of the 16mm negative for handling various light temperatures.

"Lighting the factory posed some problems, but we had an advantage because the drama occurs in many areas," says Low. Fluorescent overhead lights have a green cast; but for the long shots, it didn't matter. The green adds to the eeriness. And because film balances very well, we didn't worry about color matching. Who is to say that one part of the factory isn't greener than another?"

For close-ups Low filmed near windows, if possible, to add warmth and fill in face shadows. If the light wasn't strong enough, he used a portable Sun Gun. All of the office scenes were lit with Inky

Continued on Page 168

Roundin' up the Tough Guys!



1130 - 60" Double Riser

1120 - 40" Double Riser

1110 - 24" Sawed off, Double riser

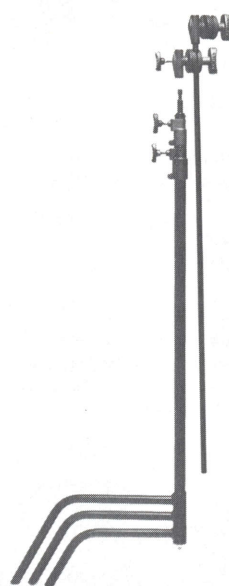
1132 - 40" Double Riser, Sliding Leg & # 5000 Full Apple Box

All shown with #1112 grip head with single extension arm.

#1111-Grip head, 2 1/2"



Stand folded, head removed



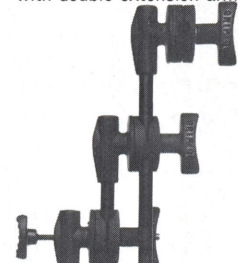
#1114-Extension arm only



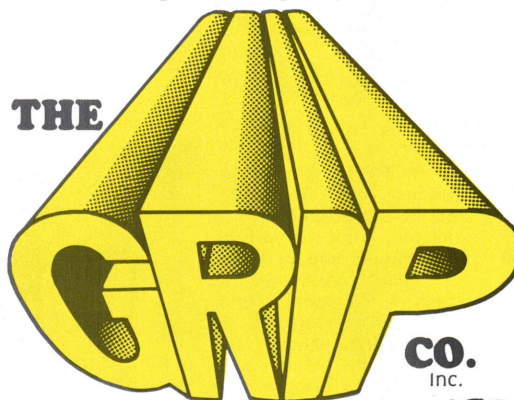
#1112-Grip head with single extension arm



#1113-Grip head with double extension arm



"Equipment made by movie people for movie people."



7272 Bellaire Avenue
North Hollywood, CA 91605
(213) 875-2656



303/315 Cricklewood Broadway
London NW2 6PO, England
Tel: 01 452 8090, Telex: 21430
Cables: Samcine London



24/26 Rue Jean Moulin
94 Vincennes, Paris, France
Tel: 328 58 30, Telex: 670260F
Cables: Samcine Paris



1 Giffnock Avenue
North Ryde 2113, nr. Sydney
N.S.W., Australia
Tel: 888 2766 Telex: 25188

25 Lothian Street, N. Melbourne
Victoria 3051, Australia
Tel: 329 5155, Telex: 35861



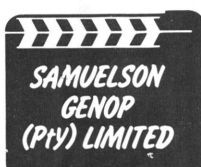
Dudden Hill Lane
London NW10 2DS, England
Tel: 01 452 5477, Telex: 21430
Cables: Samcine London



303/315 Cricklewood Broadway
London NW2 6PO, England
Tel: 01 452 8090, Telex: 21430
Cables: Samcine London



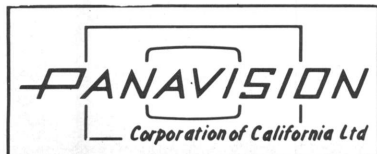
Rooms 41/43 G, Building 521,
London Heathrow Airport
Hounslow, Middlesex, England
Tel: 01 759 6011, Telex: 22197
Cables: Samfreight London
303/315 Cricklewood Broadway
London NW2 6PO, England
Tel: 01 452 8090, Telex: 21430
Cables: Samcine London



Genop House, 15 Hulbert Road
New Centre, Johannesburg, S. Africa
Tel: 835 4275, Telex: 80057
Cables: Genop Johannesburg



303/315 Cricklewood Broadway
London NW2 6PO, England
Tel: (01) 452 8090, Telex: 21430
Cables: Samcine London



The Panavision Way

Consider the parts that make up the whole, not just a camera and a set of lenses, rather a whole integrated system for making films for any size and shape of screen.

THE GOLDEN PANAFLEX. A state-of-the-art motion picture camera which can be hand held or dolly/tripod /cane mounted and which includes such features as an in-shot adjustable shutter, Panaglow ® illuminated ground glass reticule, auto-orientating eyepiece, 'brighter-than-life' viewfinder incorporating image magnification, de-amorphoser and viewing contrast filters, 250, 500 and 1000ft. magazines which fit on top or at the rear, 12-32fps integral electronic motor and is as quiet as any studio it is ever likely to work in.



PANAFLEX X. A simplified version of the Golden Panaflex at a lower rental price. Usable as principal camera or 'spare tyre'.

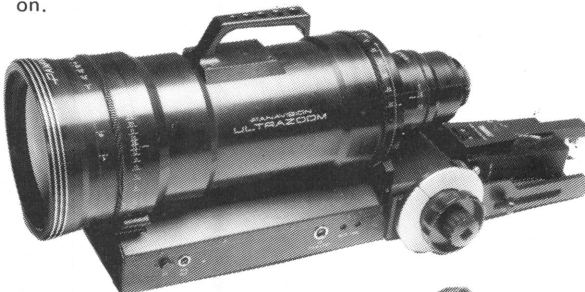
PANASTAR. Any crystal controlled speed from 6-120fps with register pin steadiness.

PANAHEAD. The smoothest pan and tilt head ever invented.

PSR. The lowest cost high quality studio camera available anywhere.

PAN-ARRI. A workhorse camera for awkward shots.

PANAVISION SPHERICAL LENSES. A range of 43 focal lengths with the best optical quality in the business. Can be fitted to ANY and ALL of the above cameras. Apertures as wide as T1, focal lengths from 14 to 1000mm and unique zooms like the 20:125 T1.9, and so on.



GOLDEN AND AUTO PANATAR ANAMORPHIC LENSES

Without question the best in the business and available for comparison tests should any prospective client doubt it. A series of 41 lenses from T1.1 wide aperture, 25 to 2000mm focal lengths and including the remarkable 40-250mm T2.8 zoom.



Ancillary items for the GOLDEN include: **PANALITE**, the unique variable intensity camera mounted basher lamp, **PANAVID**, Panavision's unique TV viewfinder, **PANAPOD**, a tripod made of space age materials, **PANATAPE** an electronic rangefinder, specialist electronic accessories which can slave Panaflex cameras to process projectors or to video monitors and hosts of other important accessories which contribute to better pictures on the screen and to making life easier for the camera crew.



PANAFLEX PANAGLIDE. The silent floating camera system and **THE ARRI PANAGLIDE** — the ultra light-weight one. Both can be inverted for low angle shooting.

And it doesn't matter where in the world you need to shoot, the **PANAVISION SYSTEM** is never more than a short flight away.

Can You Afford to Consider Any Other?

“HELLO FILMARTS? *We’re shooting in Boston next month and need a quote on a complete production package for a 35-BL, a Zeiss Super 8, a J-4 motor, a speed control, a fog filter set, an Elemack Dolly, a jib arm and a Tulip Crane for an aerial shot so we can work with a Tyler. We’ll use a Nagra 4.2 recorder with 2 universal reels, 816 and 2 Trammell 5247, gaffers tape and recording tape . . .*

BUDGET SUMMARY											
Location BOSTON		Production Number _____									
Working Title _____		Contract Price _____									
Contractor _____											
		MONTHS								TOTAL COST	ESTIMATED COST
Film & Laboratory											
Optical Work											
Script Costs											
Storyboard											
Production Staff											
Animation											
Taxi											
Camera Rental											
Crane & Dolly Rental											
Support Equip. Rental											
Sound Equip. Rental											
Editing											
Travel											
Sets											
Miscellaneous											
Monthly Totals											
Total Direct Cost											
General Supplies											
Payroll & Ins. Taxes											
Union Funds											
Total Costs											
Overhead											
Final Costs											

**CALL
FILMARTS
RENTALS**

**800-343-0527
EXT. 3**



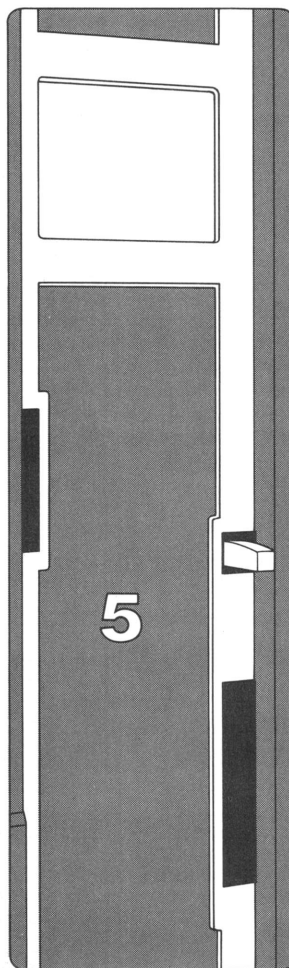
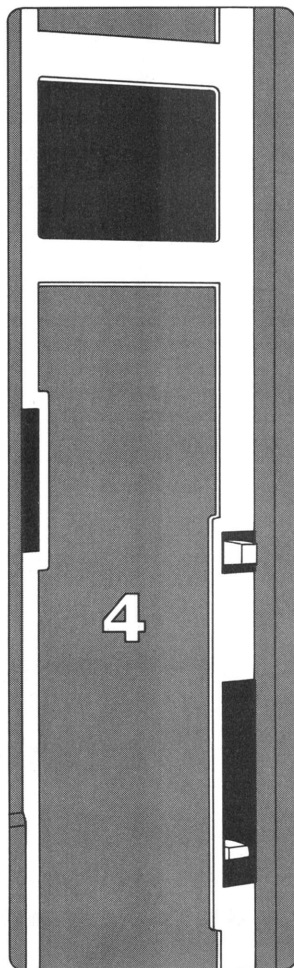
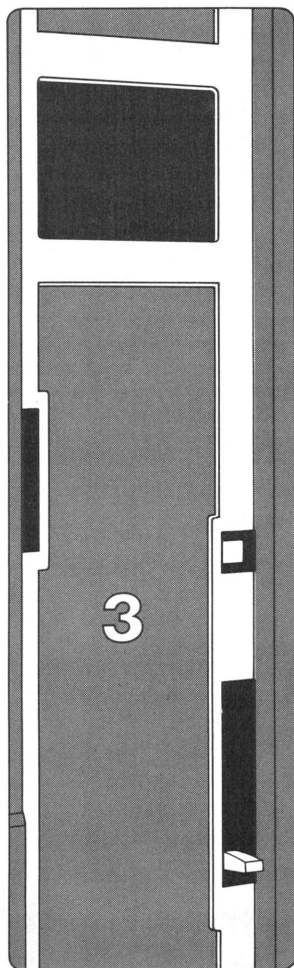
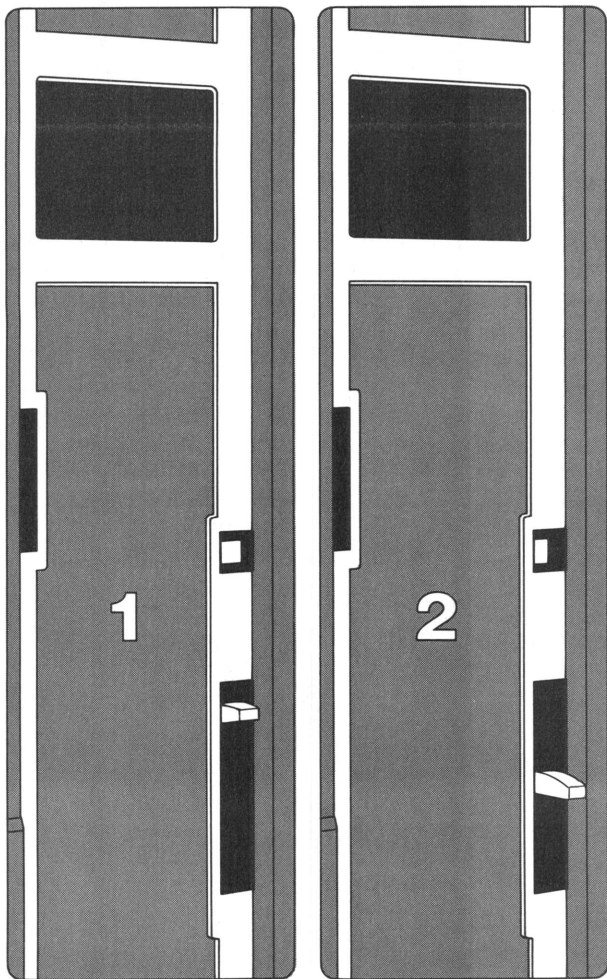
FILMARTS

MOTION PICTURE EQUIPMENT

Rentals • Sales • Leasing

38 Newbury St.
Boston, MA 02116
617/266-7468
Telex: 94-0421

Paul Gattuso,
Rental Mgr.



Continuous film control: five stages.

1. Shutter has just closed. Registration-pin has begun retracting, claw has engaged the film.
2. Claw is halfway through its pulldown. Registration-pin is fully retracted.
3. As claw nears end of pulldown, registration-pin begins to emerge again.
4. Claw begins retraction. Registration-pin protrudes to move the film to its final exposure position and hold it there.
5. No movement. Claw is fully retracted. Registration-pin is fully out and motionless. Shutter has now opened for exposure.

The 16SR registration pin:

What seems to be an unsharp lens is sometimes a slightly unsteady image.

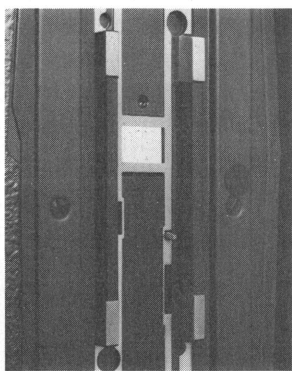
At 24 fps, a 30 minute film contains 43,200 photographs. Each of them should be exposed on film that isn't moving. In frames that are positioned *just so*, one after the other.

A registration-pin movement costs more to build and is harder to make silent. Why do we insist on one?

Of the moving parts in a 16SR movement, 40% have to do with the registration-pin. Clearly, we *must* think it important. And ARRI has been making cameras since 1917, so we've had time to think about it.

Between exposures, the claw must move the film a relatively large distance, fast. During exposure, the claw must hasten back up to do it again. The 16SR registration-

Technology of the 16SR / One of a Series:



Interaction tolerance: 0.0004 inch.

pin positions the film, slowly, and holds it there during the exposure, motionless.

These are distinct functions. In the 16SR, therefore, claw and pin have independent control mechanisms. (Nevertheless, their interaction tolerance is 0.0004 inch.) The pin is shaped like an optical printer sprocket. And since it *moves* the film to its final exposure position, the relationship of the image to the sprocket-hole is *identical every time*.

The heart of the matter: Control at every step.

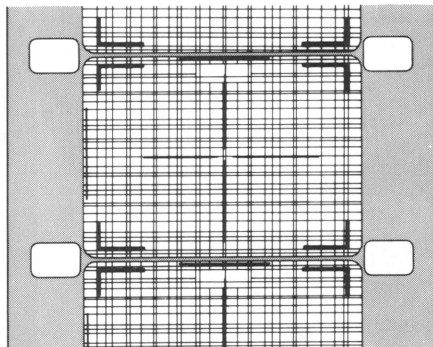
Either the claw or the pin is engaged in a film perforation *at all times*. At every stage of the pulldown, positioning and exposure cycle, the film is under positive control.



How sharp is that lens? It can depend on the camera.

Before image unsteadiness gets bad enough to be per-

ceived as such, it can appear to be lack of sharpness. A registration-pin movement costs more money. So does a first-quality lens. They go together. It would be illogical to save money by matching an expensive lens with a pinless camera.

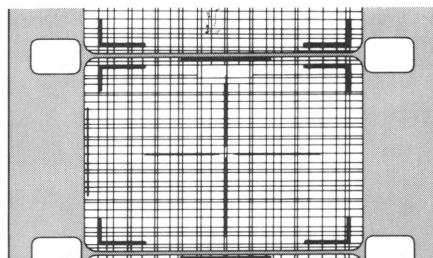


Double exposure steadiness test:

Each new 16SR is tested by running a length of film through it. As part of the test, we shoot a grid-pattern target. After the first exposure, we offset the target slightly, wind the film back and re-shoot (see illustration above).

When you buy a 16SR, you get the test film for that camera.

We project each camera's test footage. If film registration weren't perfect, the superimposed second grid image would be seen to move on the screen in relation to the first. *But it doesn't.* When you buy a 16SR, you get a small blue box containing that piece of test film.



Is it *always* necessary?

Movies have been made without a registration-pin, of course. But the pin can improve image quality from good to excellent. And it provides assurance that the camera will perform under adverse conditions and for a very long time.

No; just sometimes.

If you have to shoot in tropical or freezing weather, or in high humidity. If you're under extra G force loads (in a car or plane). If the camera is getting on in years, or hasn't been overhauled lately. If you have to super titles, or shoot at high speed. If the rawstock isn't fresh out of the refrigerator. *That's* when the registration-pin earns its keep.



16SR
**You get
what you
pay for.**

ARRI
ARRIFLEX CORPORATION

500 Route 303, Blauvelt, New York 10913.
(914) 353-1400. And 600 No. Victory Blvd.,
Burbank, California 91502. (213) 841-7070.
Canada: ARRI/NAGRA Inc., 6467 Northam,
Mississauga, Ont. L4V 1J2. (416) 677-4033.

Camera Mart and Arriflex



Arriflex 35 III

Wherever professional cinematography is practiced, the name Arriflex commands respect. Because professionals appreciate the technology and precision craftsmanship that are the hallmarks of Arriflex equipment. And they appreciate the personalized attention that is the hallmark of Camera Mart—the headquarters of quality equipment like Arriflex. All the Arri's and all their accessories are available for sale, rental or long-term lease at Camera Mart, which also provides reliable factory-authorized service. Camera Mart and Arriflex—

together they make your picture perfect.



Arriflex
Superspeed
Lenses By Zeiss

The Camera Mart, Inc.

456 West 55th Street, New York, NY 10019 (212) 757-6977 Telex: 1-2078
Sales • Service • Rentals

THE PHOTOGRAPHY OF "LITTLE LORD FAUNTLEROY" Continued from Page 133

stage where the set was already constructed and all the lamps were already up and around the rails, and so it was one of those things that never really occurred to me—how they ever got there—until I became what is known as a D.P.. But when I was asked to go on to a set with rails around it, but without any lamps, and when they asked me what lamps I needed, I had to start scratching and thinking. You play a lot of it by guesswork and "well, what would Ossie have done?" sort of attitude.

QUESTION: You've had one Oscar nomination?

IBBETSON: It was for a Hal Wallis Production called ANNE OF THE THOUSAND DAYS, with Richard Burton as King Henry and Genevieve Bujold playing Anne. That was in the Academy Awards announced in 1970. I would have dearly liked to have won the award because it would have been a rather unique occasion inasmuch as that one of the other nominees was Harry Stradling, Sr. and I just thought how wonderful it would be if I could have come over and collected an award and at the same time have been able to shower my thanks on one who was originally my teacher. In other words, Harry. Sadly Harry died before the award was given but it obviously wasn't meant for either of us, because BUTCH CASSIDY AND THE SUNDANCE KID, photographed by Conrad Hall, beat us both.

QUESTION: Are there any other pictures that you want to mention?

IBBETSON: I think one of my favorites is the second film I ever photographed, which still stands up very well to this day. It was called TUNES OF GLORY. Again with Alec Guinness and John Mills—really classical roles for both of them—and it became a sort of real on-screen battle, as it were, and what a wonderful result it turned out to be.

QUESTION: Now tell us about LITTLE LORD FAUNTLEROY. That was for television, wasn't it?

IBBETSON: That was made basically for the American television market, and for this part of the world, of course, it was for straightforward theatrical exhibition. We had a lot of fun making it, actually, because we found a beautiful location up in the Midlands with this lovely old castle

and it was just a case of going in there and staying with the castle. In other words, forget all about modern styles of photography—you know, bounce lighting, or flashing or forward developing. The objective was just to go in there and make this film and make it look and seem that it was just the way it was when that castle or home was built. Working with someone like Director Jack Gold falls into these situations so beautifully. It was probably one of the happiest and easiest pictures to go along with, inasmuch as we had a great understanding between us. We knew exactly what we were doing every day and, as I said, I tried to keep away from cinematography as we know it. I just wanted it to look absolutely authentic and the majority of the time I think I managed it. There were some cases where I had my back against the wall and just couldn't get myself really out of trouble, but for the most part, I think we won.

QUESTION: In making it authentic, presumably you mean that it looked like it was lit by gas. What period was it?

IBBETSON: Very early 20th century or late 19th century. I don't really think it was gas so much as it was the candlelight era. Not that we dwelt on candlelight as such. In fact, there were very few sequences in the film which called for effect lighting, but whenever there was, it was of that sort of golden light age of the candle or lantern style—that sort of thing.

QUESTION: This is your third picture with Alec Guinness?

IBBETSON: I know it's probably more than that. When I was an operator I'd worked with Alec Guinness on one of David Lean's pieces. We did *THE HORSE'S MOUTH* and we did *TUNES OF GLORY*, and this one—so it's four pictures with Alec. But I seem to have known him all my life. It's a span going back over a period of 36 years.

QUESTION: And to photograph Alec Guinness, does that call for any special things that over all the years include tricks that you've got to know for photographing him?

IBBETSON: No, Alec is similar to the Rock of Gibraltar; he never changes, he is just a great man to work with. He's a great artist, no pretensions, and we have a very good understanding. He knows that I know what I'm doing and there are no asides or anything like that. We just get on and it works. It works beautifully.

Continued on Page 174

We're America's premier manufacturer of plastic film reels, cans and cases. With the largest inventory facilities and engineering service staff coast to coast.

Which means you'll get the products you need — when and where you need them. Plus the quality that comes from the pioneers in the field.

PRCA invented the plastic reel and reel-pak. Invented the plastic can. Invented the plastic case. And while others were busy trying to copy our products, we were already refining them.

Our Plio-Magic® shipping case is the lightest, strongest film case made. The "positive-action" locking system and extra-durable construction provide the safest protection for your film. Our original "slim line" cans save space. Our super-strong reels save on shipping costs. All Plio-Magic products come in a wide range of colors you can't beat anywhere.

To take stock of all we have to offer, call or write today.



Plastic Reel Corporation of America

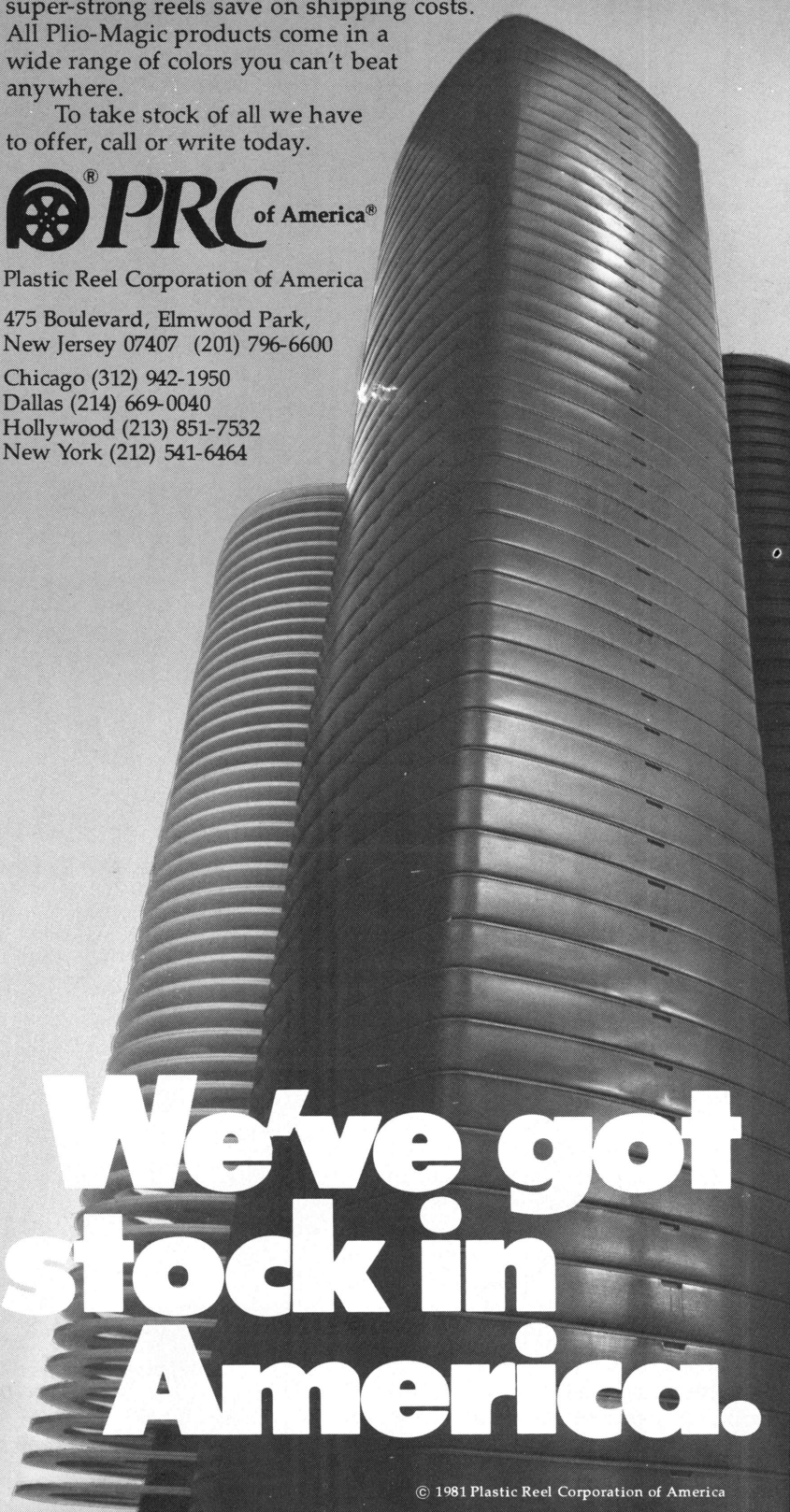
475 Boulevard, Elmwood Park,
New Jersey 07407 (201) 796-6600

Chicago (312) 942-1950

Dallas (214) 669-0040

Hollywood (213) 851-7532

New York (212) 541-6464



We've got stock in America.

THE AMERICAN SOCIETY OF CINEMATOGRAPHERS MOURNS THE PASSING OF KARL STRUSS, ASC

Karl Struss, ASC, 95, died of natural causes on December 16, 1981. Mr. Struss was a member of the American Society of Cinematographers and regularly attended the monthly dinner meetings as recently as last October.

The expertise that Mr. Struss demonstrated in his field embraced all phases of photography. He began as a pupil of the renowned American photographer, Clarence H. White, in 1908. In 1912 he graduated and took over White's studio in New York City where he did portrait photography. Later he switched to magazine illustrations and advertising photography, which was then beginning its fantastic growth. When World War I erupted, Mr. Struss joined the Army Air Force and became an instructor in aerial photography. After the war, he got a job as a still photographer with Cecil B. DeMille in Hollywood. In three months, although he was promoted to a motion picture cameraman as second cameraman, he still did portraits of DeMille, Gloria Swanson, Bebe Daniels, George O'Brien and others with whom he worked.

Every conceivable type of feature production flowed through his camera in both black and white and Technicolor, with the possible exception of westerns. He photographed DeMille's spectaculars such as *THE SIGN OF THE CROSS* (1932) and the horror drama of *DR. JEKYLL AND MR. HYDE* (1931).

In the 1950s, Mr. Struss was an expert in three-dimensional photography and was Director of Photography on the initial 3-D color film at RKO-Pathe Studios using Stereo-Cine Corp. camera equipment.

In an interview in 1957, Mr. Struss explained his philosophy regarding the art of cinematography, using his background in portrait photography.

"If modern-day dramatic cinematography may be said to belong to any school," Struss had said, "it would be that of 'idealized realism.' With cinematography today we must strive to convey an impression, not alone of actuality, but a perfected actuality. Our aim is to show players and settings, not merely as they are, but as the audience would like to see them. Each scene must not only appear realistic, but idealized to the extent at least of minimizing any disturbing elements within it. Very few players, for instance, have absolutely perfect complexions; and still fewer approach absolute perfection of line and contour. Therefore, since audiences quite

understandably prefer to see their favorites presented favorably on the screen, it is the Director of Photography's duty to minimize physical imperfections just as a portrait photographer must strive to please his clientele by presenting his subjects both faithfully and favorably—if not flatteringly. In attempting to do this, the Director of Photography's technical opportunities for controlling results through photographic treatment of the negative and print and through retouching, the cinematographer's sole means of control is in the lighting and photography. For him, the process of development and printing are virtually automatic, and permit only very limited control. Thus the picture scene or composition must be right in all respects before it is shot. Make-up, diffusion, lighting and carefully chosen camera angles are the means by which this perfection is attained," Struss had concluded.

Working actively until long past the usual age of retirement, Mr. Struss was

honored and acclaimed throughout his lifetime.

Karl Struss: Man With A Camera, was the title of a major exhibition staged first in Ann Arbor, Michigan in 1976. During his Michigan visit, at the age of 90, Mr. Struss addressed film history courses, spoke to film audiences and gave lecture/workshops in both still photography and cinematography at the University of Michigan.

Later the retrospective traveled to Los Angeles, Washington, D.C., George Eastman House in Rochester, N.Y. and the New York City International Center of Photography.

The show featured vintage photographic prints from the early years of this century. Mr. Struss was one of the youngest members of Alfred Stieglitz's Photo-Secession and had his work illustrated in the journal *Camera Work*, now considered by many to have been one of the finest art magazines ever produced. His work was also exhibited in Stieglitz's historic 1910 Albright Art Gallery show in Buffalo. Probably one of the highest achievements a still photographer could strive for in those days.

His talent behind the camera, whether still or motion picture, was undisputed. He, along with the late Charles Rosher, ASC, won the very first Academy Award for Cinematography in recognition of their camerawork on *SUNRISE* in 1927.

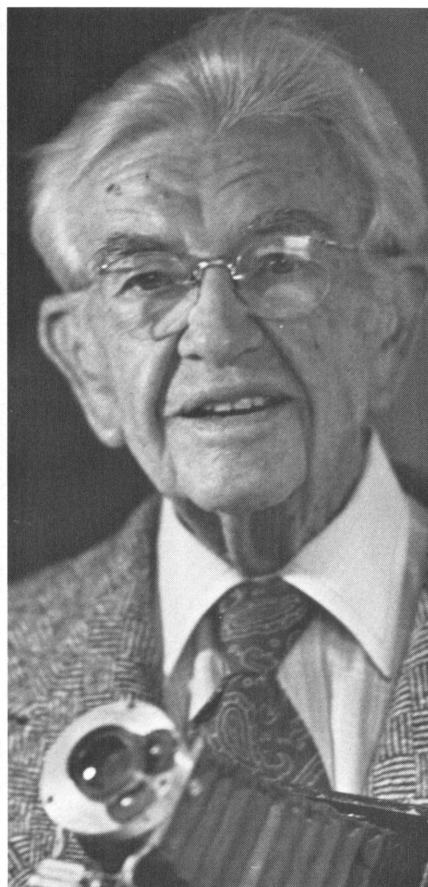
Some of the more memorable films on which Mr. Struss worked as Director of Photography are: *BEN HUR* (1925), *ABRAHAM LINCOLN* (1930), *THE SIGN OF THE CROSS* (1932), *THE ISLAND OF LOST SOULS* (1933), *BELLE OF THE NINETIES* (1934), *THE GREAT DICTATOR* (1940) and *LIMELIGHT* (1952).

Photography was not the only interest of Mr. Struss. He played golf, but his real love was tennis, playing in the motion picture tournaments and in doubles tournaments with his friend and colleague, George Folsey, ASC. Whether it was because of his good health that he was able to play tennis into his late 80s, or because he played tennis, he always enjoyed good health, Mr. Struss was in excellent physical condition.

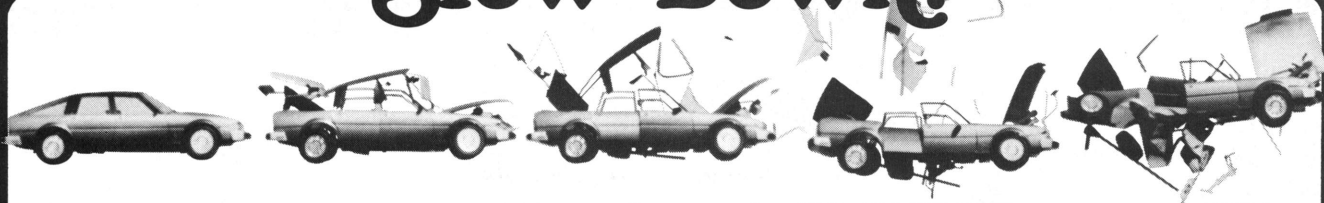
He also was a Life Fellow of the Society of Motion Picture and Television Engineers.

He will be sadly missed by his friends and colleagues at the American Society of Cinematographers, and the entire motion picture industry as well. ■

A MAN AND HIS CAMERA—The late Karl Struss, ASC was winner of first "Best Cinematography" Academy Award (with Charles Rosher, ASC) in 1927.



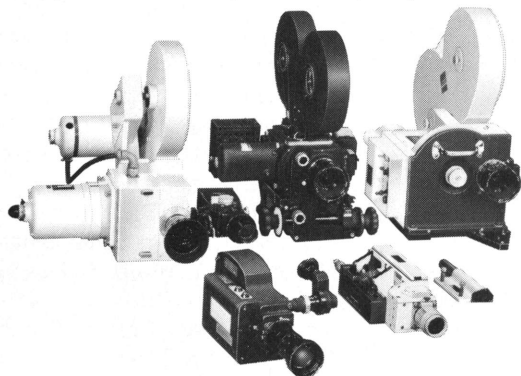
Slow Down!



Creative Special Visual Effects from the HI-SPEED Experts . . . HPS.

If you've been trying for that **special** visual effect in slow motion, but haven't quite seen what you want, look no further. Hill Production Service is **the** hi-speed expert in process cinematography.

We offer a broad spectrum of cameras and lenses in both 35mm and 16mm formats, with frame rates ranging from **6 to 3250** fps. These systems feature both precision pin registration and rotary prism mechanisms, and are completely strobe-adaptable.



Some of the hundreds of major productions and commercials utilizing HPS hi-speed cinematography include **Blowout**, **Raiders of the Lost Ark**, **The Stunt Man**, **Personal Best**, **1941**, **Wrong is Wright**, **Poltergeist**, **Dunlop Tires**, **Jantzen**, **Nabisco Team Flakes**, **Kelloggs**, **Seiko Watches** and **Yves St. Laurent**.

Whether your production needs are studio or location—full scale or miniature—HPS' total in-house technical support can provide you with the finest equipment and technicians for your most complicated shoot.

Let HPS help you expand time.

Call or write today for our new rental catalog and price list.

HPS **HILL PRODUCTION**
HPS **SERVICE, INC.**
HPS 1139 N. Highland Ave.
 Hollywood, CA 90038
 213/463-1182



sachtler gmbh

PROUDLY ANNOUNCES
 the opening of their all new
 American Sales and Service Operation

Official Opening January 18, 1982

sachtler corporation of america

Heartland Plaza, 400 Oser Ave., Hauppauge, NY 11788
 (516) 231-0033

Fluid-heads
 Motion Picture Camera
 Support Systems



Tripods
 ENG/EPF Camera
 Support Systems

INDUSTRY ACTIVITIES

BI-COASTAL VIDEO FESTIVAL ANNOUNCED BY AMERICAN FILM INSTITUTE AND SONY

An expanded 1982 "National Video Festival" has been announced by Jean Firstenberg, Director of The American Film Institute and Koichi Tsunoda, President of Sony Video Products Company. The Festival will take place in both Washington, D.C. and Los Angeles.

Scheduled for June 10-13 at the Kennedy Center in Washington, D.C. and June 24-27 at the AFI campus in Hollywood, the 1982 National Video Festival will include premiere screenings with large screen video exhibition, seminars on current video issues, and a national student competition in videotape production.

Jean Firstenberg said, "The first festival was remarkably successful as a forum in bringing together producers from many different sectors of production—from commercial broadcast to art gallery. By expanding the festival to our new Hollywood campus, we hope to extend this dialogue to reflect the growing excitement

about video that we have found here in the heart of the film and television production world."

The 1981 National Video Festival, held at the Kennedy Center on June 3-7, drew more than 550 independent, commercial, and industrial producers, as well as artists, educators, funders and students. The five days of screenings (185 tapes) and presentations (8 panel discussions plus keynoter Erik Barnouw) drew extensive national press coverage, broadcast and print.

Koichi Tsunoda said, "Sony is again pleased to join The American Film Institute in presenting the National Video Festival, which we sincerely hope will become an annual event. We believe that the exhibition of outstanding examples of video and symposia on issues currently facing us is an important step in helping the video industry and its audiences to further develop critical traditions and standards of excellence. We are especially pleased to have established an association with The American Film Institute, which can help extend its service

to the field."

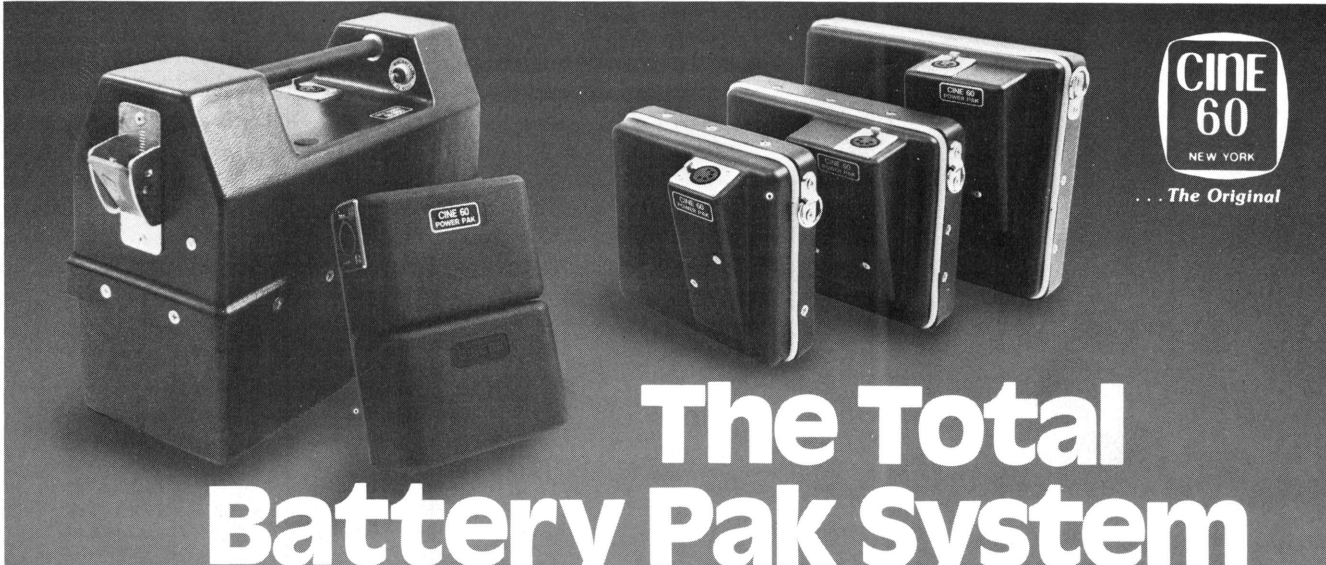
1981 Festival panelists included actor/director Robert Redford, on the works of independents; CBS News' Robert Northshield and NBC correspondent Jon Alpert on contemporary approaches to news; ABC engineer Julius Barnathan, on special effects; and former PBS Programming head Chloe Aaron on original programming for the new distribution systems.

Six major video works were given premiere screenings with a 220-inch large-screen video projection system, which Sony donated to AFI's Film Theatre. Premieres included filmmaker Shirley Clarke's video production of the Sam Shepherd play, *Savage/Love*, with actor Joe Chaikin; new music composer Robert Ashley's "Boogie-Woogie Lessons" from the "video opera" PERFECT LIVES (PRIVATE PARTS); and works by rock artist Brian Eno, documentarian Michael Marton, and "Word is Out" producer Peter Adair.

The Festival's Student Competition in Videotape Production drew more than



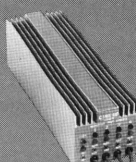
... The Original



The Total Battery Pak System

- Power-packed, higher performance Nicad Cells for more running time than lead-acid, even in cold weather; plus longer life, no maintenance.
- Second-to-none system reliability exactly the same as the acclaimed Cine 60 Powerbelt — the industry standard.
- Compact, lightweight, 8 to 16 V for Arri 16S, M, BL, SR; 35 III, BL, 2C; Eclair, Aaton cameras and Video Gear. 2.5 to 7 AH capacity; shoulder strap and built-in belt loops.
- More powerful "Lunchbox" Paks to 20 AH for 12 to 14.4 V use & to 10 AH for 30 V Sun Guns
- "Total Charging Capabilities, anywhere..."

- On location, fast charge from any 12 Volt Car System — unattended, in one hour, with our 3 lb. Car Fast Charger — no heavy inverter needed.
- From A.C., one hour fast charge with our 3 lb. Model 9400 or BP2500.
- Fast charge four batteries — automatically, unattended — with our new multiple, High Frequency, Regulated Fast Charger, one per hour, four in 4 hours.
- Standard charge one battery overnight with our High Frequency, Regulated Charging Unit.
- See your local Cine 60 dealer for the Total Battery Pak System you need.



There's Always Something New From Cine 60

CINE 60

630 Ninth Ave.
New York, N.Y. 10036
(212) 586-8782
TWX: 710-581; TELEX: 645-647

6430 Sunset Blvd.
Hollywood, Ca. 90028
(213) 461-3046

See Us At Booth #1037 NAB.

330 entries from 120 institutions in 45 states. Through regional and national judging, the student competition will once again honor the best work of college videographers in dramatic, documentary, experimental and informational video programs. More than \$100,000 in Sony production equipment, including cameras, decks, monitors, and editing systems will be awarded as prizes.

1981 winning tapes were exhibited at the Kennedy Center in Washington, the Long Beach Museum in California, and on public television. More extensive exhibition is planned for 1982. Details of the competition are available through college and university video production offices and the Television and Video Services program of The American Film Institute, The Kennedy Center, Washington, D.C. 20566.

**FUJI PHOTO FILM CO.
NAMED OFFICIAL SPONSOR
FOR 1984 OLYMPIC GAMES**

Fuji Photo Film Co., Ltd. became the 19th sponsor of the Los Angeles Olympic Organizing Committee (LAOOC), it was announced recently by LAOOC President Peter V. Ueberroth and Fuji advertising manager, Yasuji Yasuba at a news conference at the Biltmore Hotel in Los Angeles.

"The addition of Fuji Photo Film as a partner of the LAOOC brings another undisputed leader in its field into our family of Official Sponsors," Ueberroth stated.

"Fuji Photo Film brings excellence in their products and an appropriate international perspective to the 1984 Olympic Games. The use of Fuji film will capture beautifully and permanently the accomplishments of the true heroes of the Olympic Games in 1984, the athletes," Ueberroth said.

Fuji will supply film to the LAOOC for the official photographic records of the Games, and film and photographic processing materials and equipment to the accredited photographers and media personnel from all over the world during the Games.

Fuji Photo Film Co. is a world leader in the development and production of photographic products. Headquartered in Tokyo, Japan, they are committed to becoming a "total image—communication enterprise" in the 1980's.

Commenting on the agreement, Mr. Yasuba said, "As the Olympic movement seeks to promote world peace and goodwill through sports, one of our aims is to provide products and informational recording materials which contribute to bet-

Video Assist Services

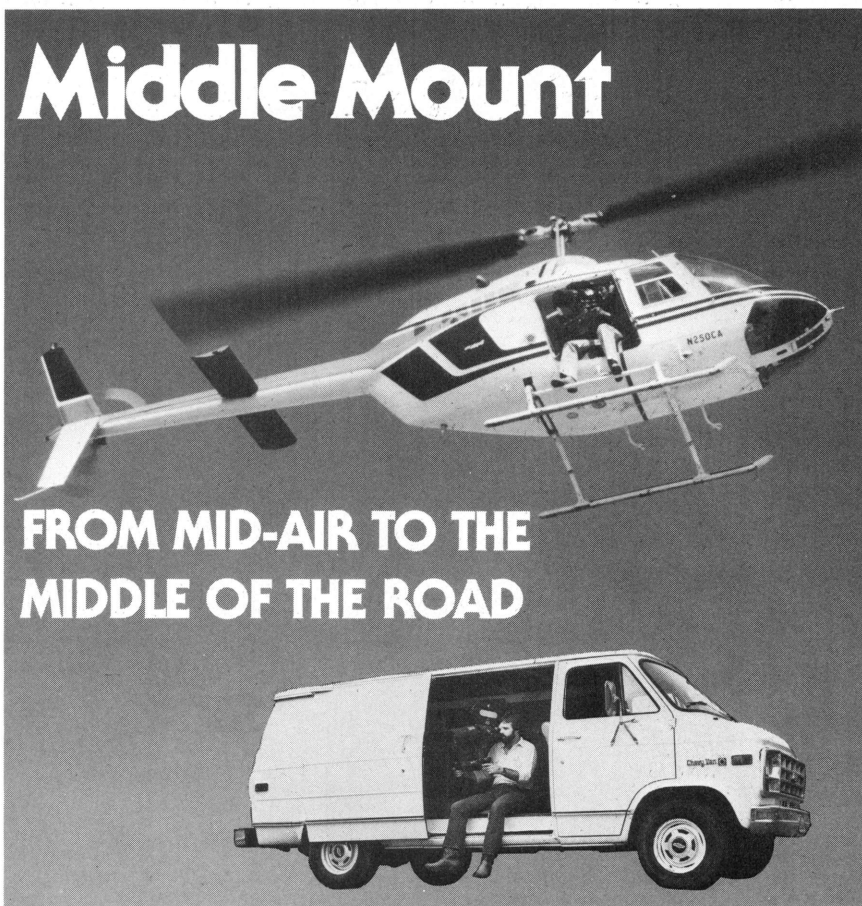
**FOR PANAVISION AND OTHER POPULAR FILM CAMERAS.
SERVING THE MOTION PICTURE INDUSTRY SINCE 1977.
SPECIALIZING IN VIDEO ASSIST AND 24 FRAME VIDEO.
PROVIDING SELF-CONTAINED VIDEO VANS AND TRAINED
PERSONNEL, FOR THE BEST POSSIBLE SERVICE!**

**FOR MORE INFORMATION
CONCERNING YOUR VIDEO NEEDS**

**CALL: LOCATION VIDEO CO.
(805) 496-2053
THOUSAND OAKS, CA**

Middle Mount

**FROM MID-AIR TO THE
MIDDLE OF THE ROAD**



The versatile Tyler Middle Mount provides smooth tracking, vibration isolation and finger tip control of camera, zoom and focus for your helicopter shots.

You also have the advantage of being able to quickly adapt the Middle Mount to a camera car, boat, airplane, tripod or stage dolly.

With the Tyler intercom system, communications between camera operator, pilot, driver or director are a snap. Air to ground or air to air

communication is also provided with a Tyler intercom/FM radio link-up.

The Tyler Mount's compact, light weight, modular design fits into two foam-filled travel cases. It can be easily set up in a matter of minutes, or quickly moved from one vehicle to another.

For your next location production, call your nearest Victor Duncan office and let us show you how the Tyler Middle Mount can take the "jitters" out of your shoot.



VICTOR DUNCAN, INC.

Film & Video Production Equipment
CHICAGO
661 N. LaSalle, Chicago, IL 60610 (312) 943-7300
DALLAS
2659 Fondren, Dallas, TX 75206 (214) 369-1165
DETROIT
32380 Howard, Madison Hgts., MI 48071 (313) 589-1900



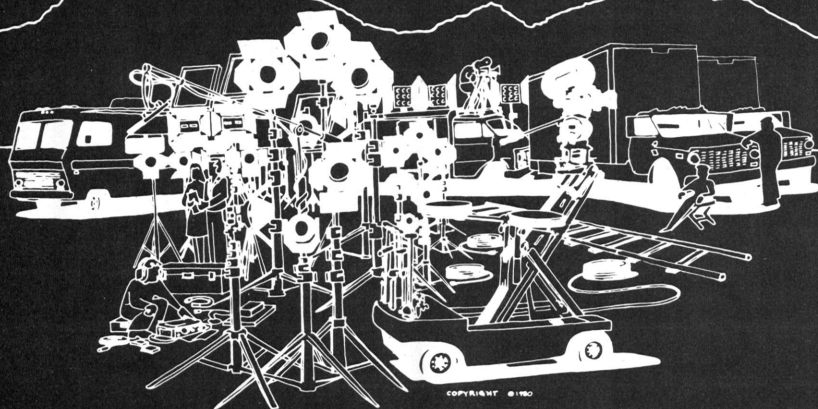
VIBRATION ISOLATION HELICOPTER CAMERA MOUNTS FOR 16 / 35 / 70 mm AND TV PHOTOGRAPHY

Hollywood 213-989-4420—San Francisco 415-864-4644—Mexico City 905-559-4845—New York 516-294-0355
Miami 305-754-2611—Boston 617-266-7468—Denver 303-777-7699—Seattle 206-881-8273
Chicago 312-943-7300—Dallas 214-369-1165—Detroit 313-589-1900—Atlanta 404-622-1311
London 01-452-8090—Paris 328-5830—Sydney 888-2766—New Jersey 212-431-3930—Tel Aviv 03-280754

Send for brochure—Tyler Camera Systems, 14218 Aetna Street, Van Nuys, California 91401 U.S.A.

HELICOPTERS CAMERAMEN CAMERA PILOTS

If you're filming in COLORADO



Rocky Mountain **CINE**
SUPPORT

Denver, Colorado

Puts it all together

Call or Write for Information

ROCKY MOUNTAIN CINE SUPPORT 1332 S. Cherokee St., Denver, Colorado 80223

Sales (303) 777-7699 Rentals 777-7690 Production Support 795-9713

ter communication between the people of the world. Where there is full communication, there are no misunderstandings."

As part of its sponsorship agreement, Fuji will provide the "Official Film Processing Center" of the Games. Located at the Main Press Center (L.A. Convention Center), it will be the central point for accredited photographers to have their film processed. Fuji will develop both black and white and color-slide film. Further, a darkroom will also be available for use by media personnel who wish to develop and print their own black and white film.

In addition to the Film Processing Center and a cash payment to the LAOOC, Fuji will:

- provide film to the LAOOC for photographic records of the Games;
- have the exclusive right to use the "Star In Motion" and SAM the Olympic Eagle Mascot in connection with the sale and promotion of film, photographic paper, printing paper, and photographic equipment; and,
- have the exclusive right to identify its film products as official products of the 1984 Olympic Games.

In a related agreement, it was announced that Fuji Photo Film USA, Inc. (the American subsidiary of Fuji Photo Film Co., Ltd.) has become an "Official Sponsor" of the United States Olympic Committee (USOC) and the U.S. teams which will compete in the 1983 Pan American Games and the 1984 Olympics.

NU MOOVEEZ IS SEEKING THE FINEST IN SHORT FILMS

NU MOOVEEZ is a theater organization in Los Angeles exclusively devoted to screening short subject films. NU MOOVEEZ shows shorts of every variety—comedy, drama, documentary, animation, musical, and experimental. NU MOOVEEZ invites all filmmakers to submit their work for screening in Los Angeles, Toronto, Boston, San Francisco, and other cities throughout the U.S. and Canada.

Playing to sell-out crowds and consistent critical raves at various theaters in Los Angeles, the NU MOOVEEZ concept of programming several short films into an evening's worth of entertainment has proven highly popular with general audiences and film buffs alike.

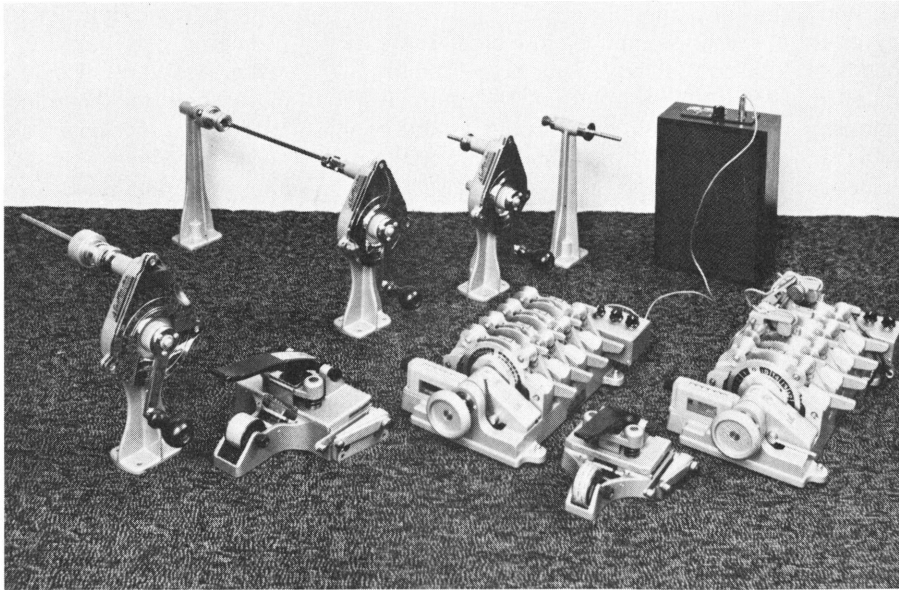
The purpose of NU MOOVEEZ is to make this unrecognized art form available to the average movie-goer and to provide talented filmmakers with the public exposure they deserve. Additionally, cash

Continued on Page 192

In Australia, New Zealand & Asia for everything required in Film & Television Equipment

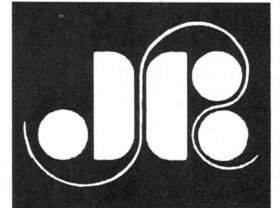
...Cameras, Editing, Lighting & Sound Equipment

Australian made rewinders and synchronisers, part of the Easton range of professional 16 and 35mm editing equipment, which also includes program timers, wind-off plates and other accessories.



JOHN DARRY

GROUP • AUSTRALIA

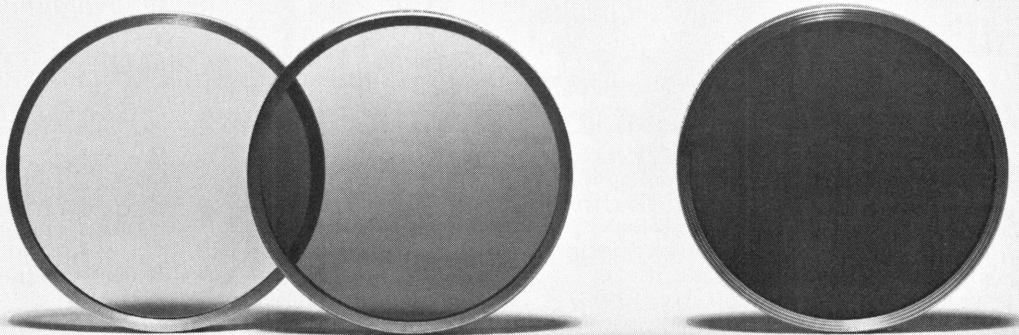


Sales • Rental • Service
105 RESERVE ROAD
ARTAMON, NSW 2064
SYDNEY, AUSTRALIA
TELEPHONE: (02) 4396955
TELEX: 24482

Offices and Agents in:

KOREA
MALAYSIA
NEW ZEALAND
TAIWAN
SINGAPORE

ONE+ONE=ONE.



Harrison's NEW COMBO-FILTER solves color problems!

- Are you tired of stacking two filters together to make one combination color...?
- Are you tired of stacking two filters together to correct Kelvin temperatures...?
- Are you tired of stacking two filters together to correct fluorescent lighting...?
- Are you tired of stacking two color filters together for any reason...?

Then why not start using Harrison's personalized Combo-Filter. You specify TWO colors... we'll manufacture your personalized Combo-Filter. Available in most popular series and professional sizes. Call or write Harrison with your order today.

Harrison & Harrison

6363 Santa Monica Boulevard • Hollywood, California 90038
Telephone: (213) 464-8263 • Cable: HARALINE

CLOTHES ENCOUNTERS OF THE FILMING KIND

Continued from Page 149

Their white stripes required dulling spray at interior locations.

That was three years ago, and I was fortunate to graduate into a world where men were "moe" (in the East) and "pal" (in the West.) A world where you'd never carry the camera with tripod still attached, but where the occasional comedian would nevertheless offer a Panaflex to hand-hold with Elemack still attached, and where the camera crew, not through any conspiracy, mind you, just happened not to be wearing blue sneakers. Perhaps it was a subconscious desire to please Gordy Willis, should he ever call with the next big one, since his hatred of blue is well publicized. Anyway, the electric department wore blue sneakers.

After much experimentation and hot debate, many sneakers later, a clear favorite emerged: the NEW BALANCE 660. You can stand comfortably in them all day. Lightweight, they have foam insoles that conform to and remember the shape of your foot. It's like walking barefoot, only you have to pay about \$55. Made in Boston, they come in every imaginable size and width in a pleasing grey color that matches Panaflex magazines and can pass for shoes in dark fancy restaurants.

SOCKS. The Athletes Foot stores sell excellent cotton tube socks. You don't have to fumble in the dark trying to find the heel (because there is none) when you have early calls.

DRY FEET. You should also have a pair of Gore-Tex sneakers for warm, wet days. The Gore-Tex vents your perspiration out, but prevents water from coming in—and it works. The Early Winters "Reebok" and the Brooks "Hugger G.T." are two popular brands. Early Winters is in Seattle, and sells by mail.

When the temperature drops or the locations get more rugged, you'll be happy to have Gore-Tex Boots. They make every heavy, waxed, rubberized or treated boot you've owned obsolete. The Early Winters "New Age Hiker," and the NIKE "Approach" have the light weight and softness of running shoes, the support of hiking boots; they breathe and are waterproof.

WARM FEET. On cold days, wear a thin silk or Olefin sock liner, and a thick pair of wool socks, such as the Wigwam Polars available at Eddie Bauer (mail order—Seattle, WA).

SWEATY FEET. If you are on an expedition to hostile environments, or find yourself on a mid-winter feature, the only footwear to have are Sorels with two pairs of wool felt liners. Since the liners get wet from perspiration (which will chill your feet

even more), you alternate the liners while they dry out. On Arctic and climbing expeditions, apply Ban Roll-On anti-perspirant directly to your feet, rub on some Frost Guard Creme, and be alert for frostbite.

HANDS. Until they come out with a Panawheel heater for the metal wheels, operators are going to need thin leather gloves. As the temperature drops, go to wool and leather driving gloves or Aris cross-country ski gloves—supple, warm and with a good-grip. Even warmer are Thinsulate and Gore-Tex ski gloves.

When it gets below 0, skin sticks to metal. Assistants should wear thin silk glove liners for threading. Avoid silver space liners—which are slippery.

For prolonged work at low temperatures, an Eddie Bauer Expedition Mitt is good over cross-country gloves.

HEAD. You lose most of your body's warmth through your head. So, if you feel cold, put on a hat. An Orlon tubular neck gaiter is smaller and stays on better than a scarf.

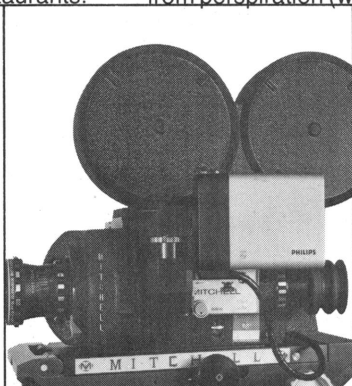
SKIN. The latest high-tech word in long-underwear is 100% polypropylene. Stretchy, non-itchy, warm, it can't absorb moisture but wicks it away from your skin. Most ski shops and outfitters carry it.

PILE. A similar polyester is knitted into a sweat-suit type of fabric, called Thermalwear, Boglite, FibrePile, Patagonia

YOU DON'T MOVE UP AFTER A MITCHELL...

You just add
accessories
to reach
new highs.

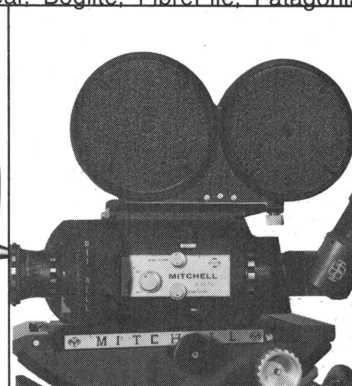
You're already there. Owning a Mitchell MK II or S35R means having sixty years experience behind you right from the start. All you need to make your mark is genius. Mitchell backs you with all the added versatility, flexibility, and ease you'll ever need to make it to the top.



Mitchell Mark II/S35R Video Tap allows simultaneous viewing by the camera operator and video monitoring and/or video tape recording—especially versatile in commercial productions and actor/director applications. Video tap door and conventional focus tube door are interchangeable in minutes, in the field or on stage. Video tap incorporates Phillips LDH26 Series TV cameras, available in a wide selection of camera tubes and versions compatible with all TV systems.



Mitchell MKII/S35R Orientable Finder provides expanded flexibility and ease of operation for Mitchell MKII and S35R series cameras. Ideal for set-ups in tight places, low angles and confined set-ups. Installs in any Mark II or S35R in minutes—with a screwdriver. Features self-erecting image regardless of finder's relative position to camera. Does not affect high/low magnification or operation of viewing filters in focus tube of camera.



Mitchell Lightweight Geared Head provides all the features professionals demand, and it is built to the same exacting standards which have distinguished Mitchell cameras, the world-over, for sixty years. Forty four pound head features three speeds in pan and tilt. Built-in-lift plate eliminates need for wedges to obtain extreme angles of depression.



THERE'S A LITTLE MITCHELL IN EVERY MOVEMENT.

Mitchell Camera Corporation

P.O. Box 279 • 11630 Tuxford St. • Sun Valley, CA 91352 • (213) 768-6400 • Telex No. 67-7108

Pile and Bunting by the various manufacturers. It stays warm, even when wet, insulates better than wool, is lighter, and breathes better. It comes in zip-up jackets, pants, pullovers and vests.

DOWN. You still can't beat down for warmth, light weight, and ability to be stuffed and compressed into small areas. No location clothing system should be without a down vest, down jacket and that ultimate winter status symbol, the Eddie Bauer Superior Polar Parka, which increases in price each year with the predictability of a sound investment.

If you're shooting in the Pacific Northwest or other cold, rainy climate, you should wear PolarGuard or Hollofil—which retains more warmth when wet.

WET. The clear winner for rainwear is Gore-Tex. You should have a rain jacket and rain pants, with zip-up legs so you don't have to remove your boots to get the pants on. The jacket should be large enough to fit over a down jacket. Gore-Tex is expensive, but just one day working in the rain will make that cost seem well worth it.

IN AND OUT. The toughest day is one where you are going from cold and wet exteriors to hot and humid interiors. The camera has to be sealed in a plastic garbage bag so water condenses on the outside. As for yourself, you will be thankful the zipper was invented and hopeful that your clothing has them.

Zippered jumpsuits that pull over your regular clothing, zippered fleece-lined aviator boots that fit over your sneakers, zippered ski warm-ups that go over your pants—will make life easier—until the zipper gets stuck at a crucial moment. Keep it well fed with silicone.

The Eskimos have a better idea. They avoid zippers, and stay indoors in winter.

Thoreau had the best idea of all. He said, "Beware of all enterprises that require new clothes." ■

THE TIFFEN STORY

Continued from Page 137

creased and the brothers hired three more employees. By the end of 1947 they were ready for the move to their new larger facilities on Beckman Street in New York. This move was accompanied by a jump to 20 employees.

During this period the products were predominantly metal rings for filters and adapters. It was about 1948–1949 when Tiffen began to get involved with the glass and optics. Originally the glass was manufactured on the West Coast and shipped East for assembly. By 1950, Nat Tiffen took over responsibility for the glass manufacturing processes and everything was done under the one roof in New York. In

Rycote Microphone Windshields

MAY WE INTRODUCE OUR LATEST IMPROVEMENT

The windshield now slides on and off the suspension assembly without any fiddling with screws or lining up holes.

We've cut a slot along the windshield.

Hey presto—now you can remove or replace the windshield in seconds.

A good improvement—no alteration in price—progress.

Oh yes—it's beautifully made—as usual



SENNHEISER

AKG

Etc

Rycote Microphone Windshields, New Mills, Slad Road, Stroud, Gloucestershire GL5 1RN, England. Tel. 04536 79338

Film & Tape

The Country's Leading Non-theatrical
Full Service Laboratory . . .
Foto-Kem/Foto-Tronics

THE LAB WITH A DIFFERENCE!

Foto-Kem/Foto-Tronics is a mid sized, well equipped lab that puts its pride in its dedicated people; people who care. We'll treat you like a network president, even if you're not.

- **Foto-Kem:** Super 8, 16mm, and 35mm reversal and color negative developing, CRI's and other intermediates, reduction dupe negatives, and release printing. Wetgate optical and contact printers.

- **Foto-Tronics:** Video tape transfers from 16mm and 35mm film negative or positive to 2" quad and 1" type B or C format, or to ¾" U-Matic and ½" VHS or Beta video cassettes. Rank Cintel Flying Spot Scanners. Tape to tape duplication.

- State-of-the-art equipment, systems, and expertise. A facility unequalled in the industry for cleanliness and attractive decor. Superb analytical department.

- Dailies overnight, on-time delivery, competitive prices, centrally located in the heart of the Burbank/Hollywood (Hollybank) communications industry. Ample parking. Our customers around the country know we're just as close as their phone, mailbox and express delivery service.



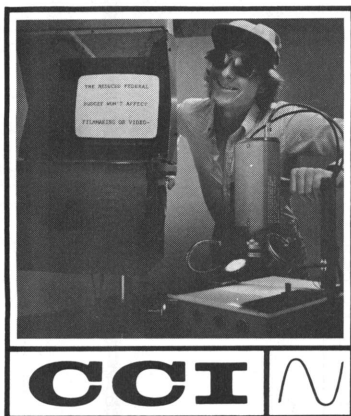
FOTO-KEM
Industries, Inc.

MOTION PICTURE LABORATORY
2800 W. Olive Ave.
Burbank, Calif. 91505
213/846-3101



FOTO-TRONICS
Systems Inc.

VIDEO TAPE TRANSFERS and DUPLICATION
2800 W. Olive Ave.
Burbank, Calif. 91505
213/846-3101
A DIVISION OF FOTO-KEM



AN ACTOR'S BEST FRIEND

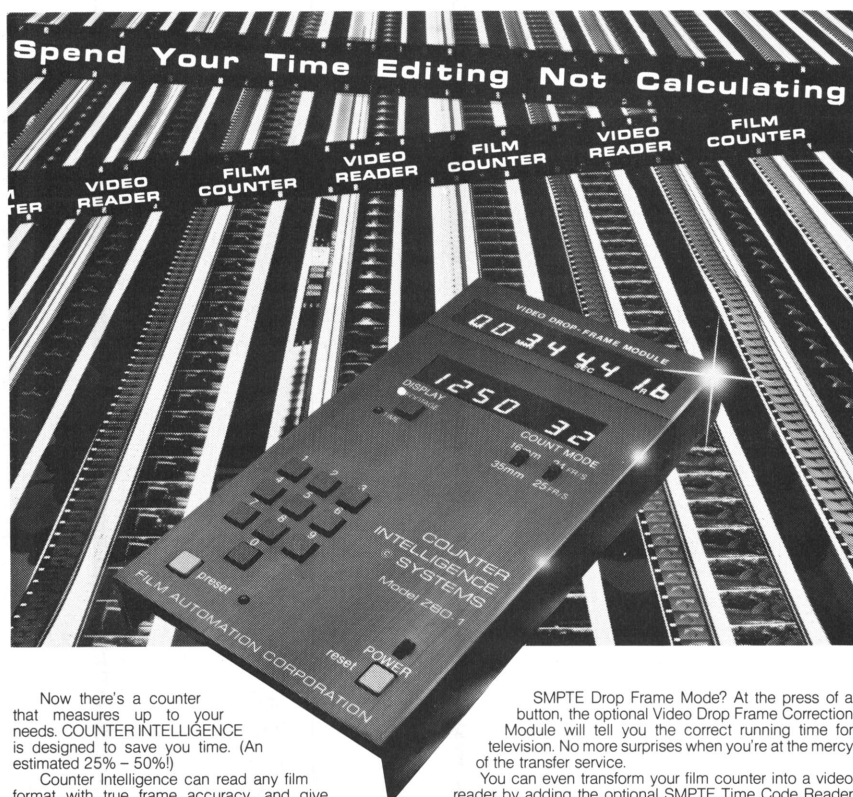
Even the best talent can use a friend on the set. And **TELESCRIPTER** is very friendly—so is CCI.

So end those "endless" takes. Your performer will get it right—right on camera axis—let your audience do the double take, not you. Our film and video prompting system is available for both rental and purchase. Cue us for a free demonstration.

When you're filming, videotaping or sound recording, call for a friend at CCI.

CALIFORNIA COMMUNICATIONS, INC.
6900 Santa Monica Blvd., Hollywood, Calif. 90038
(213) 466-8511

☐ Check here and return for a free 1981/82 Catalog



Now there's a counter that measures up to your needs. **COUNTER INTELLIGENCE** is designed to save you time. (An estimated 25% - 50%)

Counter Intelligence can read any film format with true frame accuracy, and give you correct running time at 24, 25 or 30* frames per second with the flick of a switch. No calculations. No complications. Try that with your mechanical or electronic counter.

You can install encoders on any film transport in your studio, then place the display where it's most convenient for you. In less than ten minutes you will be up and counting.

The **PRESET** function allows you to enter positions and lengths into the counter. You can measure intervals, backtime, or start in the middle of the reel, knowing that Counter Intelligence will keep you in sync. No need to rewind.

If you want to see both footage and time simultaneously, add the optional **Simultaneous Time Display Module**.

Frustrated by lost frames when you transfer to video in

*with Video Drop Frame Correction Module and with the **SMPT** Time Code Reader Module.

SMPT Drop Frame Mode? At the press of a button, the optional **Video Drop Frame Correction Module** will tell you the correct running time for television. No more surprises when you're at the mercy of the transfer service.

You can even transform your film counter into a video reader by adding the optional **SMPT** Time Code Reader Module. Just plug it in and you have a low cost reader that can go where you need it. Your savings in window dubs alone will justify getting Counter Intelligence for everyone in your studio.

Counter Intelligence includes the **Model Z80-1** and one optical encoder. Options include the **Large Screen Projection Display Module**, the **Simultaneous Time Display Module**, and the **Video Drop Frame Correction Module**.

Future modules will expand the system for production as well as post-production.

So let Counter Intelligence take care of the calculating while you spend your time where it's most valuable.

For further information write or call:

FILM AUTOMATION CORPORATION
30 Berry Street, S.F., Ca. 94107
415-777-2599

COUNTER INTELLIGENCE

DISTRIBUTORS:

Laumic Co., Inc.
New York City
(212) 889-3300

Christy's Editorial Film Supply, Inc.
Los Angeles
(213) 845-1755

Adolph Gasser, Inc.
San Francisco
(415) 495-3852

1952 with more than 50 employees, the Tiffen brothers were once again looking for larger facilities. A move back to Brooklyn in 1952 was quickly followed by another relocation in 1954 to Jane Street in Roslyn Heights, L.I. Tiffen continued to expand during the 24 years at the Roslyn location and by 1978 employed about 100 people.

In 1978 a tragic fire destroyed much of the Roslyn Heights plant. The complete inventory was lost, including \$200,000 worth of products ready for shipment. This calamity was compounded by the loss of many one-of-a-kind specially mixed colors and discontinued dyes. Undaunted, the Tiffen Brothers regrouped at the present facility in Hauppauge, New York. This plant is 40,000 square feet, doubling their previous area. With 130 employees, the new plant quickly regained momentum and even surpassed previous levels of production. The professional market continues to grow and Tiffen is quite involved with video applications, including behind-the-lens filters and filter wheels.

Originally, Nat Tiffen supervised most of manufacturing, while Sol handled sales and Leo ran the office. Leo Tiffen passed away two years ago, but Nat and Sol are still very active. Nat now spends more time outside developing new products and manufacturing methods. Because filters are specialty items, there are few manufacturing machines available. In many cases, Nat must travel halfway around the world to procure a machine to perform a specific manufacturing function, and even then it must usually be modified. Nat's son, Ira, is also an integral part of the company, contributing to the R & D program, as well as being in charge of the critical color mixing and lamination processes. It is this proprietary lamination process that is probably the singularly most important element in the Tiffen success story.

Prior to Tiffen's process, most glass filters were solid glass. In this method of manufacture the color is mixed with the molten glass and then poured into cavities where it is allowed to cool. These thick glass filters are then polished and ground to a predetermined thickness and finish. During the cooling process, the color dyes do not remain perfectly homogeneous. The density can vary within a filter, and from filter to filter. Colors can sometimes separate and, of course, the density will be greatly affected by variances in glass thickness. As a result, solid glass filters can exhibit significant inconsistencies in both density and color. Many filters on the market are of this solid glass type.

Tiffen filters are not solid glass. They are created by a special lamination process.

ture. The dyes are precisely measured and mixed with thinners and solvents into a liquid form which is then applied to the glass substrate. Some glass can have a slight blue or green tint to it that would throw off the true transmission characteristics of the filter. Tiffen uses only the purest crystal water-white optical glass. The laminate forms an ultra-thin coating on this glass that is less than 1 mil. thick. The thickness of the laminate coating is precisely controlled, which maintains the proper color and transmission characteristics.

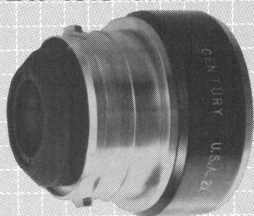
Because the glass is totally clear and only a substrate, the thickness of the glass has no effect on the transmission or color quality of filter. A second clear glass plate is placed on top of the coating forming a sandwich. The sandwich is placed in an autoclave at about 300° and 400 pounds of air pressure. The laminate is actually liquified at these temperatures and a tremendous pressure removes any air bubbles. Upon cooling, the three elements are actually fused into one. The dye layer is safely protected within the two pieces of glass.

After the entire process is completed, each run is carefully inspected with a spectrometer for exact density, transmission, and color. A permanent record is kept for each run. If any parameter does not meet specification, the run is destroyed. Tiffen has been using this basic process since 1952, although many refinements and improvements have been incorporated over the years. The exact subtleties of this method add up to somewhat of a Tiffen family secret. Nat Tiffen personally supervised the process until 1973 when his son Ira assumed the responsibility of the proprietary process. With the family secret in capable hands, Nat was now able to spend more time outside exploring new products with users, and procuring and adapting new machinery for filter manufacturing.

The quality of Tiffen filters is so consistent that Kodak recognizes Tiffen wratten numbers to be perfect equivalents of their own. As a matter of fact, Nat Tiffen calls the Kodak transmission curves his bible. Unlike gel filters cemented between glass, the Tiffen laminate filters will never separate or change color or transmission characteristics. A skin diver once dropped a Tiffen filter in saltwater off Aruba. Three weeks later the filter was retrieved, cleaned, and found to be in perfect condition; a testimony to the durability of the Tiffen process.

The Tiffen legacy continues. New filters are continually being created, as well as new accessories like the collapsible rubber lens shades which were pioneered by

The 2x tele-extender designed for today's zoom lenses.



The Century 2x tele-extender—a sophisticated, precision machined unit utilizing a new air spaced, four element, fully coated optical design to reduce distortions common to lens extenders. Available for Aäton, Arri, and CP-16R mounts. Contact Steve Manios in Los Angeles or Jeff Giordano in New York.

CO Century precision cine/optics
A DIVISION OF CENTURY PRECISION INDUSTRIES, INC.

10661 BURBANK BLVD., NO. HOLLYWOOD, CA 91601 17 W. JOHN ST., HICKSVILLE, NEW YORK 11801
(213) 766-3715 TELEX: 66-2419 (516) 931-6320

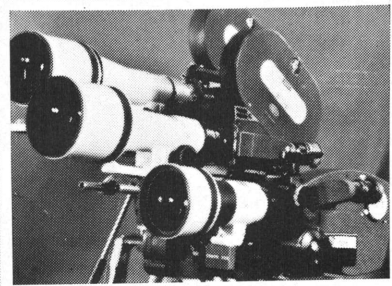
When It's Out of this World . . .



B & S is generally there too — represented by professional equipment from our extensive Rental Department — shown here recording a new era in America's space program. NASA's Space Shuttle orbiter, built by *Rockwell International*, was launched on its first orbital flight in April, 1981. **BIRNS & SAWYER**, 1026 N. Highland Ave., Los Angeles, CA 90038, (213) 466-8211, Telex 673280.

CANON LENSES:

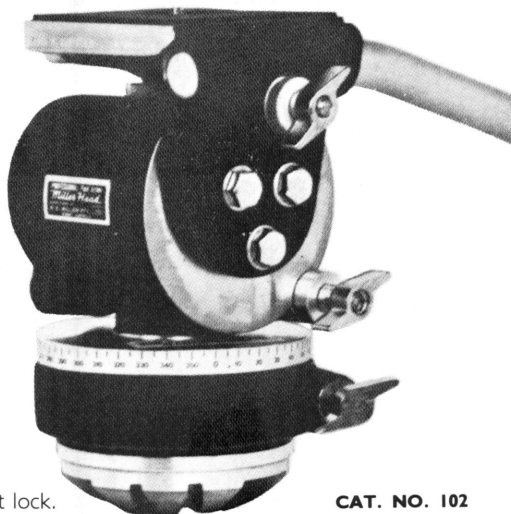
300mm F2.8 in Arri mount,
600mm F4.5 and 800mm F5.6
— available in Arri, BNCR,
Canon, Nikon and "C" mount.



MILLER

Still the most widely used fluid head in the world!

The Miller Professional-F Series Fluid Head for film and video cameras is a masterpiece of engineering and reliability, so rugged that we back our products with a full one year international warranty.



CAT. NO. 102

Miller Pro-F Fluid Head
with cluster claw ball and positive tilt lock.

SPECIFICATIONS

Capacity: 20 lb (9.8 kg)
Weight: 5lb 4oz (2.37kg)
Size: 5 1/2" high 5" wide 5" long (14x13x13cm)
Tilt: 100° forward 80° back
Tilt Drag: Fluid — continuously adjustable
Tilt Lock: Positive — independent of fluid system
Pan: 360°
Pan Drag: Fluid — continuously adjustable

Base: Pro Jr. (options available)
Handle: Vertically & horizontally adjustable
Camera Mounting Screw: 1/4"-20 (3/8"-16 optional)
Temperature Range: -30°C to +50°C (-22°F to +122°F)
Material: Aluminum alloy castings
Finish: Black wrinkle baked enamel, anodized &/or plated
Accessories: Claw-ball levelling unit; Slip Pan unit

EXCLUSIVE CANADIAN DISTRIBUTOR
SALES AND SERVICE

LEO'S CAMERA SUPPLY LTD.
1055 GRANVILLE ST., VANCOUVER, B.C. V6Z 1L4
604-685-5331



(PATENTED)

Write or call for prices and the dealer nearest you on the complete line of Miller Professional Products.

Tiffen. Tiffen also maintains its relationship with most of the major camera manufacturers, as well as many specialized industrial and aerospace users, such as NASA.

My trip to the Tiffen plant was certainly quite enlightening. The exploits of the Tiffen brothers (and son) and the evolution of their unique filter products was most interesting indeed. I was equally intrigued by the manufacturing subtleties that Tiffen uses to create the fog, double fog, low contrast and diffusion filters that are so popular among professional cinematographers. The way these filters create their unique visual effects is quite an interesting topic and one I hope to share with you in a future issue. ■

"CHALLENGER—ANATOMY OF AN HONORED DOCUMENTARY Continued from Page 151

Dinkys, and some of the factory sequences were bolstered with Mini-Brutes.

During the year and a half, Poulsson exposed between 45,000 and 55,000 feet of film, which for an hour film is a ratio of 20:1.

Due to the unpredictability of scheduled events, and Canadair's cooperation, the crew had the luxury of time and the ease of reshooting a sequence if the drama wasn't quite right.

Time was both a blessing and a curse. Low says his biggest technical difficulty was in predicting when events were going to occur, since management usually didn't know. Low frequently had to keep film crews on standby for "scheduled" events.

"Sure enough, if I finally cancelled a crew, things would happen," he says.

For example, the first public display of the new aircraft, the rollout, was a very important sequence. The rollout date was subject to many delays, and Low and the crew had to be prepared to shoot on a short notice and film either indoors or outdoors.

As a precaution, the crew spent two days in a cherrypicker hanging 12 Mini-Brutes from the ceiling of the hanger. Fortunately, the weather was good and the event took place outdoors as scheduled.

Low used three camera crews to cover the event and the final footage includes reportage filming, as well as close-ups of the aircraft filmed the day before.

"Most of the close-ups were filmed the day before the actual event," says Low. "For important scenes, we usually set them up beforehand. The first test-flight sequence took weeks of shooting, and the takeoff scene is a composite of three days."

For ground visuals, Poulsson was in the cockpit of the plane, riding up and down the runway. He took long shots with a

PHOEBUS

when you shoot
in No. California & Nevada

RENTALS/SALES/SERVICE

MOTION PICTURE, VIDEO
LIGHTING & GRIP EQUIPMENT

- Complete line of professional quartz and HMI lighting—rental or sale
- Trucks, generators
- Delivery service
- Roscolux and Lee filters
- Complete line of GE, Sylvania and HMI studio lamps in stock
- Grip equipment & production supplies

PHOEBUS CO., INC.

145 Bluxome St.
San Francisco, CA 94107
(415) 543-7626 Telex 340-901

50 Freeport Blvd., Suite 3
Reno/Sparks, NV 89431
(702) 359-4519

600mm Nikon lens adapted for the Eclair camera.

As in most situations, the crew had complete cooperation from the Canadair employees.

"I had a close working relationship with Kearns," says Low, "but he is still a businessman with a company to run. I had to know when to push and when to back off. I couldn't afford to cry wolf."

The crew often had to work quickly when filming top management. For example, one scene early in the film has Kearns walking down the hallway of the quiet factory, heading for his office. The scene opens with a long shot of Kearns at the opposite end of the hall walking in and out of light and shadow. Poulsson created the effect by lighting from the inside of the offices flanking the hallway, and using a Mini-Brute at the entrance of the hallway.

Some of the most impressive cinematography comes at the end of the film, when the Challenger finally gets off the ground. In the first few minutes of this in-flight footage, the plane seems to be floating in the air, almost surreal, as if it is being held up by strings as it soars over snow-tipped mountainous terrain. Choreographed to an original musical score, the scene is stunning.

The aerial photography was done by Clay Lacey on Eastman color negative II film 5247. The 35mm color negative film was reduced to a 16mm internegative that was cut with the original. Outside the jet, Lacey used a Continental camera system, mounted inside a periscope, that swivels 360 degrees and tilts, providing great filming flexibility. Lacey did the filming, while Low sat in the plane, calling the shots.

For Low, some of the hardest work came in the editing room where he and editor Roger Hart struggled for months to make the film exciting and suspenseful.

"The structure of the film, weaving the interactions between marketing and engineering decisions, is really quite complex, and at some points fairly chaotic," says Low. "To make the film exciting and to keep the audience feeling the progress being made toward the goal, we had to emphasize how difficulties were overcome in building the plane. We struggled for months in the cutting room."

The effort has paid off. "Challenger: An Industrial Romance" has won many honors while reaching millions of television viewers in the United States and Canada. Many companies in both countries are using the film for training and development seminars for management. Canadair also lends the film to customers and subcontractors. Prints are available at all Canadian embassies and the Film Board sponsors weekly public screenings. ■



International Cinema Equipment Company

SELECT FROM OUR LARGE STOCK OF PRE-OWNED CINEMA EQUIPMENT. ALL ITEMS CHECKED IN OUR SHOP. SATISFACTION GUARANTEED. WRITE FOR OUR CATALOG. TRADE-INS ACCEPTED.

CAMERAS

CP 16 R—with 10-150 zoom, mag head, CRS sound, battery, magazine, case, and more	\$5,950.00
CP 16 A—with 12-120 zoom, Crystasound, battery, magazine	2,395
Auricon 600 special with 12-120 zoom, MA 11 sound, magazine, case, and more	1,595.00
Beaulieu R-168 with 12.5-75 zoom	695.00
Auricon Super 1200 with 12-120 zoom, optical sound, turret, 1200' magazines, cases and more	1,395.00
Canon Scopic, macro zoom, case	795.00
B&H 70 DR, body only, filter slot	125.00
B&H 70 HR, body only	395.00
B&H Eyemo, 35mm reflex, 28mm Angenieux lens	1,295.00
Arriflex S with three lenses, motor, magazine, torque motor, and cables	2,995.00

LENSES

Angenieux 12-120 with AV 30 finder, C mount	\$ 750.00
Angenieux 12-120 with AZO finder, C mount	825.00
Angenieux 9.5-95 with case, filters, and more	1,295.00
Pan Cinor 17-70, C mount	195.00
Pan Cinor 17-85, C mount, side finder	395.00
AZO finders (other lenses available)	25.00

MOVIOLAS

16mm with two picture heads, three sound heads, older model	\$ 995.00
16mm UL20S, late model, one picture head, one sound head	1,250.00
16mm UL20CS, same as above only with extra sound head	1,495.00
16mm Moviola flat bed, M77-16, six plate	5,950.00
35mm UD20CS with one picture and one sound head	2,950.00
35mm UPLVCS-2 with extra sound head	1,995.00

EDITING EQUIPMENT, miscellaneous

Precision single gang 16mm showtimer	\$ 85.00
Moviola two gang 16mm synchronizer	95.00
Moviola single gang 35mm synchronizer	95.00
Moviola two gang 35mm synchronizer	135.00
Moviola two gang 35/16mm synchronizer	110.00
Moviola three gang 16/16/35 synchronizer	150.00
Moviola four gang 16mm synchronizer	195.00
Moviola four gang 16/16/35/35 synchronizer	250.00
Moviola four gang 35mm synchronizer	250.00

Precision 35/16 model 600 sound reader	135.00
Precision 35/16 optical/magnetic sound reader	195.00
Moviscop 16mm viewer	149.00
Maier-Hancock hot splicer 16/35	189.50
Maier-Hancock hot splicer 8/16	119.50
Rivas straight cut 16mm splicer	80.00
Rivas straight cut 35mm splicer	120.00
Ciro tape splicer 35mm, NEW	175.00

SOUND

RCA PR 32 optical recorder	\$7,500.00
RCA FR 10 16/35 insert recorder	6,750.00
Otairn MX 5050 1/4" stereo	995.00
Otairn MX 7000 1/2" quad	1,950.00

LABORATORY

B&H JA 16mm printer	\$1,495.00
B&H JC 16mm printer	1,995.00
B&H D 35mm printer with 3000' flange	1,395.00
B&H J 16mm printer with Hurlertron head	1,595.00
B&H D 35mm printer with sound head and 3000' flange	2,750.00
HFC 16/S8 reduction printer	4,400.00
HFC high speed projector, mint	2,950.00
Cleanair Ultrasonic cleaner	1,500.00
Macbeth densitometer	250.00
B&H C 16mm sound reader and perforator low speed	450.00

35mm PROJECTORS

International 104 portable projectors NEW, from	\$3,695.00
DeVry XD semi portable 35mm, rebuilt	1,895.00
Tokina T60 portable 35mm NEW	4,695.00
Simplex XL studio interlock, rebuilt	7,795.00
Century C studio interlock, rebuilt	7,750.00
Phillips FP 20 tv telecine, rebuilt	12,750.00

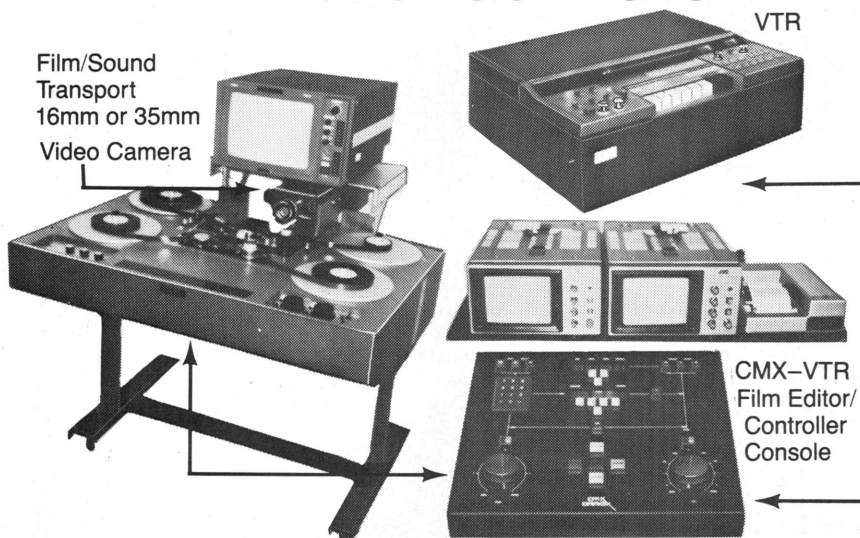
16mm PROJECTORS

Eastman model 258 studio projector, reconditioned	\$2,750.00
Horton professional 16mm with xenon lamphouse, rebuilt	6,750.00
JAN 614, NEW	2,250.00
JAN 614 rebuilt	750.00
JAN 614 used	275.00
Bauer optical/magnetic	595.00
Siemens double band interlock	1,495.00
Sonorex double band interlock	2,995.00
Eiki RTO, Excellent	440.00
(many more 16mm projectors in stock)	

All items used unless noted. Check on extended warranty. Trade-ins accepted. Installations worldwide. Catalog available. Prices do not include shipping charges. Prices subject to change.

6750 NORTHEAST 4th COURT / MIAMI, FLORIDA 33138 U.S.A.
TELEPHONE: (305) 756-0699 756-6590 TELEX 810/519562

Computer-Assisted Film Editor/Controller



The CMX/ORROX Film Editor/Controller offers an Editor the possibility of being able to rapidly build up a video tape visual and audio representation of his decisions without cutting any film. The system is simple to learn, fast to use and as each version of a sequence is edited an automatic edge number list is generated for later matching.

LAUMIC CO. INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016 (212) 889-3300-1-2

Exclusive East Coast Distributor for the CMX/ORROX Film Editor/Controller

Isn't it nice to know we'll be around to service your equipment... **AFTER THE DEAL IS CLOSED?**™

"HEARTBEEPS"... AND HOW IT WAS FILMED

Continued from Page 123

Cruz, California, to a factory in Pacoima, a junkyard in Gardena, and a bear cave, a lake and a specially-constructed house on Universal's backlot, HEARTBEEPS and the robots made their way on the journey.

A backdrop of barley fields and cathedral rings of redwood and fir trees on a mountaintop give HEARTBEEPS a majestic tone as the robots struggle ahead; the massive redwoods seem all the more immense as the diminutive Val and Aqua search for their child-unit who has wandered away.

More than 20 matte paintings by Albert Whitlock in stylized realism add to the near-future look of the film.

The White Manufacturing Company in

Pacoima had to be dressed each day after regular work hours (and undressed each morning) for a week during filming there. The near-future factory look is bright colors, hardhats in lime, orange or aqua, with jumpsuits to match.

Not much had to be done at all at Cal-State Metals, a junkyard in Gardena, where the robots think they're in utopia and play among the spare parts.

A set was constructed on a Universal soundstage for the shelves of the repair factory where Val meets Aqua, and CatSkil is later brought. Some of the other robots lining the shelves were BroomBots, AgriBots or humanoids with wires splayed from an arm socket.

A party house on the Universal backlot was made for destruction by the police unit on his search for the missing robots. In the story, the owner has an egg fixation

and set decor continued that idea to eternity. Egg-shaped pillows, ashtrays, sofas and artwork were put together by set decorator Marc Meyer.

THE PRODUCTION

Director Allan Arkush puts it this way: "We had everything but children, and even one of the robots is a child."

Mechanical robots, animals (including an eight-foot, 800-pound bear that ate raw chicken and marshmallows), lots of night shooting, many scenes that had to be captured just at the right moment of dusk and a makeup job that was whittled slowly to only three or four hours a day for Kaufman and Peters were some of the problems.

Arkush bought screenwriter John Hill a rubber stamp that said "Dusk," and explained, "So in his next script he doesn't have to type it often."

Another time delay was an hour and 15 minutes in Kaufman's contract for meditation, in addition to the makeup time.

A closed set and press blackout imposed by producer Michael Phillips only whetted Kaufman's fancy for publicity. Once, he had a reporter take the Universal Studios tour and leave it at the appointed stage on which the company was shooting. She walked in, armed with a camera, and security lines were tightened from a tip. She left without a picture.

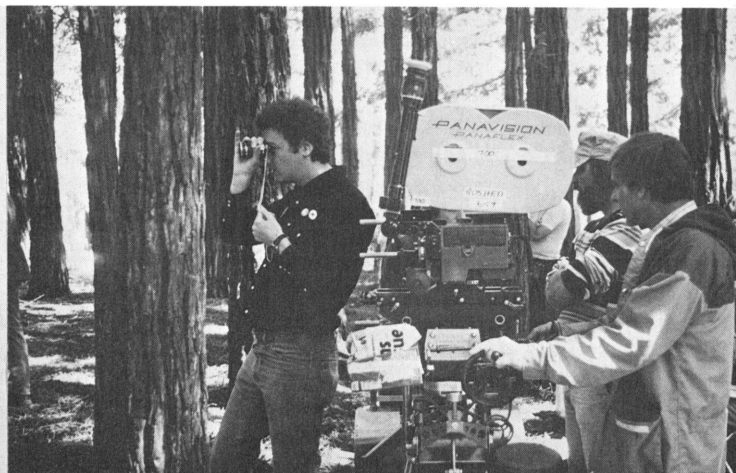
Kaufman's notorious zaniness surfaced again and again throughout the filming, like the time he walked out in the middle of the most dramatic scene in the film because he saw a candy bar.

He found his wardrobe too hot and uncomfortable to wear for any length of time when cameras weren't rolling. Makeup and wardrobe people followed him around, picking up jackets, robot hands and directional-finder bowties.

One day, when the delays were longer than usual, Director Arkush ordered a shotgun from the propmaster and fired it

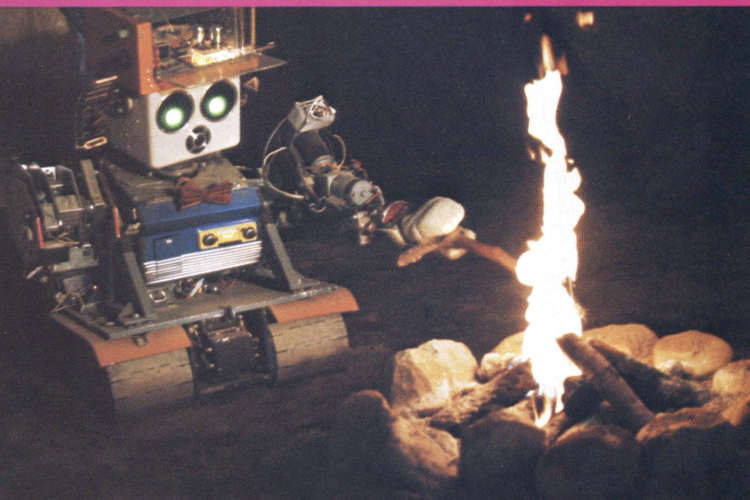


(ABOVE LEFT) Baby robot Phil, exploring his exciting new world just like a real child, is fascinated by his furry friend the raccoon, whom he encounters in the junkyard. As he bent forward to look at the cunning animal, his head fell off—an occupational hazard for robots. (BELOW LEFT) Director Allan Arkush chats with his star, Bernadette Peters, who was always on time, in costume and in good humor. (RIGHT) Arkush lines up a shot in the woods for the Panaflex camera.





(LEFT) Director Arkush runs through a scene with Kaufman and Peters. (RIGHT) Miss Peters plays the role of AquaCom-89045, a hostess-companion robot (or kind of electronic *geisha*). Specially designed to assist at poolside parties, she is presumably waterproof to cope with the advances of drunks who keep pushing her into the pool. Even though she has metallic hair, a dazzling white ridge in place of teeth and a plastic smile, she is made to look glamorous and utterly feminine, mainly because of the skilled lighting and camera angles of Director of Photography Charles Rosher, Jr., ASC.



(LEFT) Baby robot Phil (named for the Philco radio components on his chest) is an intricate actual robot built at a cost of \$350,000 and designed by Jamie Shourt and Robbie Blalack, Academy Award-winning (STAR WARS) special effects experts. Capable of 24 separate electronic maneuvers and charmingly human, he all but steals the picture from the skilled flesh and blood actors. (RIGHT) Served by a robot maid and butler, guests at a party are dismayed when CrimeBuster runs amok and destroys the party house. (BELOW RIGHT) This stroll through the woods by the four robots is reminiscent of Dorothy and her companions following the yellow brick road in *THE WIZARD OF OZ*.

at Kaufman, commanding the tardy actor to return to the set.

Peters, who was always on time, in costume and good humor, shared Kaufman's discomfort with the makeup, particularly during the outside daytime shooting.

One afternoon on location in Santa Cruz, Kaufman's and Peters' makeup slipped lower and lower, and their lips melted shut. Another time, waiting for the magical moment of "dusk," crew people busied themselves with last-minute chores. Peters stood on her mark in the barley field high about the Pacific Ocean, waiting for the sun to dip behind the redwoods, waiting, waiting, waiting. Suddenly, she flung her arms out at her sides and began singing in a strong soprano, "The hills are alive, with the sound of music."

All three mechanical actors, try as they might and with as many functions and channels and men as they had to help

Continued on Page 195



BEHIND THE CAMERA ON "HEARTBEEPS"

Continued from Page 139

your most unusual lighting situation in the picture?

ROSHER: The picture opens in the warehouse built on Stage 28 in the studio, which is where all the robots are prepared to be sent out to wherever their destination may be. In one scene, after they fall in love, they decide to run away together and go out in the world on their own, not knowing anything. In that sequence we had a very dramatic rainstorm, with lightning and a tree falling right across the windows. There were six or seven different types of light changes. The overhead lights go off; emergency lights come on; the lightning flashes. It was a very large three-story set. But we had some unusual lighting situations outdoors, too.

QUESTION: For example?

ROSHER: For example, on the Santa

Cruz location we had an enormous amount of shooting that had to be done in late afternoon light. These were major sequences that had to be shot between 5 and 8 o'clock in the evening. We jokingly called this a "two-minute drill", because the light is gorgeous between 7 and 8 o'clock, but it changes from minute to minute while you're trying to put all these robots together on a hillside for a big dolly shot. I must admit that these sequences have a lot of glamour.

QUESTION: Did you use the moving camera to any great extent?

ROSHER: Yes. Since HEARTBEEPS is really an adventure film about the robots running away and going on a trip, there was a great deal of crane work and an enormous amount of dolly track had to be laid so that the camera could actually travel with them through the woods. We found beautiful locations near Santa Cruz and set up 200 feet of dolly track through the forest. We tried to take full advantage of the scenery, with all those pine trees

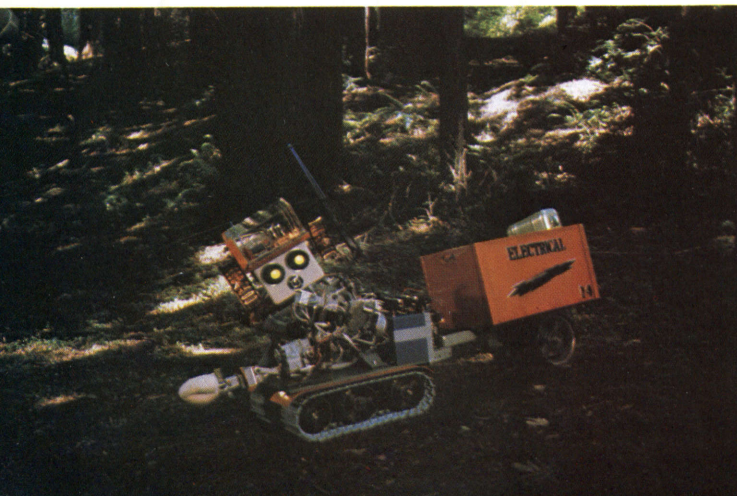
and the beautiful verticals. Sometimes you lose the "up and down" when you're shooting in the anamorphic format, as we were, but we had our Titan crane, so we could capture the up and down by taking advantage of the crane arm to get the scope on the sides and really play with the verticals.

QUESTION: You spoke of "dappled light" in the forest. How did you handle the extreme contrast of that kind of light situation?

ROSHER: It was a major problem, because we were always trying to second-guess where the sun was going to be, up above in the trees. Every time you thought you had it figured out, you'd get fooled again. So, in certain cases where we knew the light would get too hot, we would set up 20 x 20 silks. In other cases we would use foliage to help solve the problem. We had two terrific greens men on this film and they would place plants in particularly hot areas and camouflage



(LEFT) The camera set at normal eye level results in a "high angle" shot of tiny Phil, puttering through the woods with his spare parts wagon in tow. Getting an effective angle was especially difficult when he had to be shown in scenes with full-size adults. (RIGHT) Cinematographer, Script Supervisor and Director take time off to be photographed between set-ups. (BELOW LEFT) One of the problems: photographing Phil in the deep woods with dappled light creating a high contrast range. (RIGHT) Another problem: retaining the form of CrimeBuster in night-for-night scenes.



them. Sometimes we would see the silhouettes of those plants through the hot areas and take advantage of them artistically. Instead of having an enormous stretch that was burned out, we would take a nice soft green piece of shrubbery and place it right in front of that hot area. Then we'd see only part of the hot area leaking through the shrubs and it would add up to a nice effect. It was like creating our own movie set in the woods as we went along. We must have carried two truckloads of all types of trees and branches in order to get those effects. Otherwise we would have had vast bare and hot spots that would have been so contrasty that they never would have looked right. We were constantly moving greens to break up those hot areas—not to kill them, but to just tone them down. We liked to see the light bleeding through the greenery, because that added to the look of the film, but the greens work we did in the woods just saved our life.

QUESTION: You spoke of how difficult it is to take advantage of verticals in the anamorphic format, did that format pose any other problems for this kind of subject matter?

ROSHER: I found that when you have a little child robot who is very small only 3½ feet tall—and you have adults who are six feet tall and you are trying to find compositions to compose that small child with its mother and father in a three-shot, you can have a bit of a problem at times. But we solved those problems by working with low angles, cross angles and wider shots.

QUESTION: Aside from that compositional element, did photographing the child robot, Phil, present any unusual challenges?

ROSHER: Phil was really wonderful. He was made so well and his hands would move up and down and he could do all sorts of things. He could cut a fence with scissors and he could pick up things, such as butterflies, and play with them. He was really adapted to playing with animals and all types of little objects . . . flowers and everything. His eyes would respond beautifully to everything that happened to him, and he would run away from his mother and father just like a real kid. In fact, Phil is almost human when you see him on the screen. You don't consider him to be a robot; you think of him as a real person. Everyone loved him and he became part of us.

QUESTION: Was he in any way difficult to photograph?



Director Allan Arkush (left) discusses an upcoming scene with Panaglide operator, as photographic measurements are taken. Since the majority of the film's action has to do with a trip taken by the robots, many moving camera shots were required, including those made from a Chapman Titan crane. (BELOW RIGHT) Although photographing HEARTBEEPS posed many technical problems, Director of Photography Rosher found it a "fulfilling" experience.

ROSHER: Not really—except that he was low to the ground in comparison to the adults, as I've said. He had his little trailer full of spare parts, which he dragged everywhere and that was part of the story line. When we first find Aqua and Val after their escape, they have run their truck into a tree in the woods, because neither one of them knew how to drive. The next time we see them is at sunrise the following morning. We look down at them from a Titan crane as they walk around below among the trees and the shafts of light. The next sequence is where they are building their child. They have all these pieces from which they put him together and then they run him around. They designed him and it's like they have given birth to their own child. As they travel along they add more parts to him. They go to a hardware store and they sneak in at night and take electronic parts and toys. Finally they go to a junkyard and that's where they find all these wonderful wires and metalwork and things that they keep adding to Phil in order to make him more advanced and capable of doing more things.

QUESTION: Can you tell me about filming in that junkyard?

ROSHER: In that junkyard we had day scenes, but we also had to create a sunset. We had only so many days that we could shoot in that location and I had to start creating a sunset effect somewhere around 10:30 or 11 o'clock in the morn-



ing. So I got into telephoto lenses. Since it was wintertime and the sun was much lower, I got a break in that I could catch a nice backlight much more easily. Having a lower sun enabled me to create the impression that it was later light. Also, I was adding on coral filters and compressing all my scenes with two 360mm lenses that stacked everything. The corals warmed everything up and created a very dusty, late-afternoon effect. Then, when we had to get our wider shots, we would wait until the very end of the day when the light was

Continued on Page 191

FLEXIBLE REFLEX



NOW AVAILABLE FOR RENTAL AT
MARK ARMSTEAD IN HOLLYWOOD

Flexible means interchangeable BNC-R, Nikon, Leica and Canon lenses, and the ability to change from academy to full aperture centering. *Flexible* means provisions for a film clip on precision aligned register pins, viewable by both the operator and video. *Flexible* means right or left eye viewing with unlimited viewfinder positions thru 360° rotation. *Flexible* means your choice of video assists, matte-box rod holders, groundglasses and motors. *Flexible* enough for 2nd unit photography, commercials, high-speed, inserts, animation, motion control and special effects in general. The Fries 35R is a reflex conversion to the reliable pin registered Mitchell GC-STD camera. Basic conversion price of customer supplied camera is \$5,800.00 F.O.B. Fries Engineering, 12032 Vose Street, North Hollywood, CA 91605. (213) 765-3600.

fries
Engineering



SOUND MAN

THE LONDON INTERNATIONAL FILM SCHOOL

New York, Hong Kong, Wellington, Toronto, Port of Spain, Tel Aviv, Teheran, Lagos, Melbourne—just a few of the studios world wide in which our graduate students are working.

The intensive two year Diploma Course covers 16mm, 35mm, black and white, colour, feature production in the studio and documentary location production, together with specialist courses in Animation and Music for Film and Television.

Students are thoroughly grounded in all the technical aspects of Film Making, benefiting from the experience of staff who have spent a total of over 200 years in the industry. The 178 students from 42 different countries come privately or are sponsored by Governments, TV stations and Educational Institutions.



For further information write to:

The Administrator, The London International Film School,
24 Shelton Street, London WC2H 9HP.

THE PHOTOGRAPHY OF "LITTLE LORD FAUNTLEROY" Continued from Page 157

QUESTION: Well, working with Ricky Schroder, who played the title part, having a young boy in the picture—does that present any problems for a cinematographer?

IBBETSON: Well, normally it does. I mean, as a lot of us know, children are full of life and they tear around and they run about and they never like to stand still or keep still while you're trying to assess what you've done, but this youngster was so different. I think we all had great apprehension when we started, thinking, "well he is going to be another brash, tearaway kid" but, in actual fact, he was absolutely fantastic. I can't describe it in any other way. We all thought, with Alec being the true English gentleman, that this was the one time that we might see some sort of adverse reaction from the old to the young, but there was nothing. Those two, they just hit it off as though they had known each other years and years and years. This child is so intelligent and he is an absolute professional at such an early age. What is even more, he is lovable. He is a lovely kid, unlike so many kids that I've worked with where you really want to boot them straight out of the studio. This one was a phenomenon. I just don't know where they found him.

QUESTION: Shooting for television primarily, rather than for cinema release, does that change your way of photographing in any way?

IBBETSON: It doesn't change the style of photography, but it dictates an awful lot of things—like the height of the lamps, to begin with. There's always this drama about "Can we just have another six inches higher on that lamp?" Or because we're working with practically full aperture, we have to hang more flags to chop out flares that we get. I don't think shooting for television affects too much the style of photography, but it does affect the time it takes to do it, inasmuch as, instead of just putting lights on, we have all these other little items of labour that creep in: "Hang the lamp a little higher; it doesn't go high enough." "Hang the chopper or cutter from the roof." They are all time-wasting things. If we could only just get the system where we know basically that we're shooting for television, and that's the end of it, then we could go along with it and live with it, but while we still have to compose for the wide screen format, I'm afraid it's always going to have this time-wasting element.

QUESTION: What was your shooting schedule on this picture?

IBBETSON: Offhand, I think it was about 28 days, or something like that—not very long really. Certainly not for me. I've always been used to working on 60-day productions, or longer, and especially with having a child in the picture. I remember at first saying to Jack Gold, "Well I don't know whether we can do it in the scheduled time. You know what children are like, and this kid has just come over from the States and he doesn't know anybody and we haven't had time to get to know him." In fact, I hadn't even met him until the day we started shooting. But I was happily proved wrong. It was a very, very, happy experience and the time just flew. There was no pressure; we had to work very little overtime, perhaps a couple of hours here and there, but nothing really to talk about. We didn't have any interference from Norman Rosemont, our producer. He had another film running at the same time back in the studios, while we were up in the Midlands. But he didn't interfere with us; he seemed to have great confidence in the way it was all going. It was just a very pleasant episode in my life.

QUESTION: What style of photography did you use on this? Tell us about the photography.

IBBETSON: I thought I'd try to get the 60-year-old look, at least, so I knew it wasn't correct to use all soft lighting as such. Not that I'm a great admirer of it, but 60 or 70 years ago, all the things I've seen, all the paintings, etc., had a certain softness about them, so I thought I'd go along with a reasonably fine gauze which I thought I'd keep on all the way through the film, even for the exteriors. Inside we could control the degree of contrast or softness to whatever we wanted, using the straightforward lighting units that I've always used, the ½K's, 1K's, 2's, 5's, 10's, just to keep a level exposure, and use the existing light through the windows. That seemed to be the main essential that I needed inside. Occasionally I would have to use something coming in through the windows of this castle and normally I'm a Brute fan inasmuch as I think it's a great lamp. It gives out a great light, lights a great area, and, as I said, normally I'd have gone along with that. It just wasn't possible in the circumstances, however; the only way I could get any light through the windows was to be on top of another building which was outside of the windows. So Brute's would have meant a big

Continued on Page 198

Volume Discount 16mm Release Prints.



- * Send us your internegative or CRI for color positive release printing.
- * Reversal Ektachrome Printing. * Realistic Turn-Around-Time.
- * Realistic Prices . . . call for quotes.

512/472-6926



**photo
processors inc.**

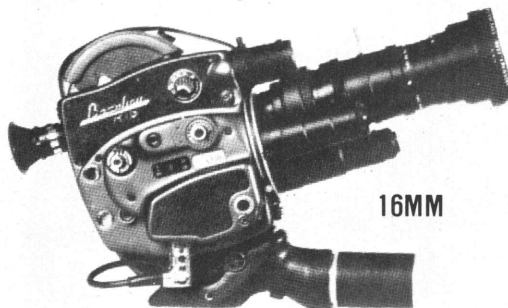
P.O. Box 2116A, Austin, Texas 78767

Beaulieu

INCONTESTABLY, THE FINEST!

NEW 6008S — 6008PRO

- Schneider 6 to 70mm f1.4 Zoom (Macro)
- Interchangeable "C" Mt.
- 200 ft. Cartridge + Rewind
- Variable Shutter. Lap-dissolve, Time Lapse
- LED Monitoring System
- Mirror Shutter Reflex Viewing (100% light)
- Quartz Crystal Control. (6008 PRO).
- fps speeds: 4 to 80 + Single frame



16MM

R16B PZ Automatic w/12 X 120
Angenieux Zoom
R16B Reflex Control Mono
R16B Reflex Control Turret
R16 ENDOSCOPIC CAMERA

Exclusive U.S. Distributor

Otto Hervic / Beaulieu

4907 Valjean Avenue, Encino, California 91436 • (213) 981-7457 • (213) 981-5810
Canadian Dist. Adams and Associates • 1645 Bank St., Ottawa, Canada K1V7Z1

NEW YORK'S NEW STUDIO COMPLEX FOR FILM AND VIDEO PRODUCTION

By MILTON FORMAN, *Consultant*
A.S.C. Associate Member

America's oldest active motion picture studio is being transformed
into its newest, most modern and most efficiently planned facility

Although New York was the first film capital of the world, memories are short, and today Hollywood only looks upon it as an interesting and visual location area. However, its history as a center for film and television production has given the New York area a special capability which does not exist anywhere else in the United States, except for the Los Angeles area.

In the early 1900s, New York was the center of production for feature films, commercials, documentaries and, from the 1940s, television. As a result, the special elements necessary to support these industries were developed. These included highly skilled labor in every category, organizations with equipment to service this complex industry, and laboratories to process the film and video product.

History of New York as a Center of Production

The first major stage built in the United States was financed by the LASKY FAMOUS PLAYERS, later known as PARAMOUNT PICTURES. This stage and studio complex was built in Astoria in 1920, only a few miles from the center of Manhattan. It was 26,000 square feet in area and had a height to the bottom of the grid of forty feet—an ideal size and proportion for major film production even in terms of the needs of 1980. Its history is rather interesting, since the design of the original studio antedated design trends developed in Europe at tremendous costs in the

1960s and 1970s, particularly the design and use of the grid. *TILL TODAY, THIS STAGE IS THE LARGEST AND MOST USEFUL STAGE IN THE UNITED STATES OUTSIDE OF HOLLYWOOD ITSELF.*

Early Production at the Astoria Studios

From 1921 to 1927, 110 silent films were produced at the Astoria Studio. From 1927 to 1931, with the advent of sound, 35 sound films were shot. In the early part of 1932, film production moved to California because of the more stable weather, and, as a result, very few films were made in New York.

However, the need for training and other types of films for World War II required the use of the excellent facilities of Astoria. Thus, in 1942, the Astoria Studio was transferred to the War Department, and the Army Pictorial Center was born. Between 1942 and 1970, an average of 300 films per year were made. Many of the old-time filmmakers who are today the most skilled in the art received their basic experience at the Army Pictorial Center.

Following the end of World War II and its aftermath, the Astoria Studio was shut down in 1970.

Re-Opening of the Astoria Studio

As part of a program to attract income to New York and to develop employment

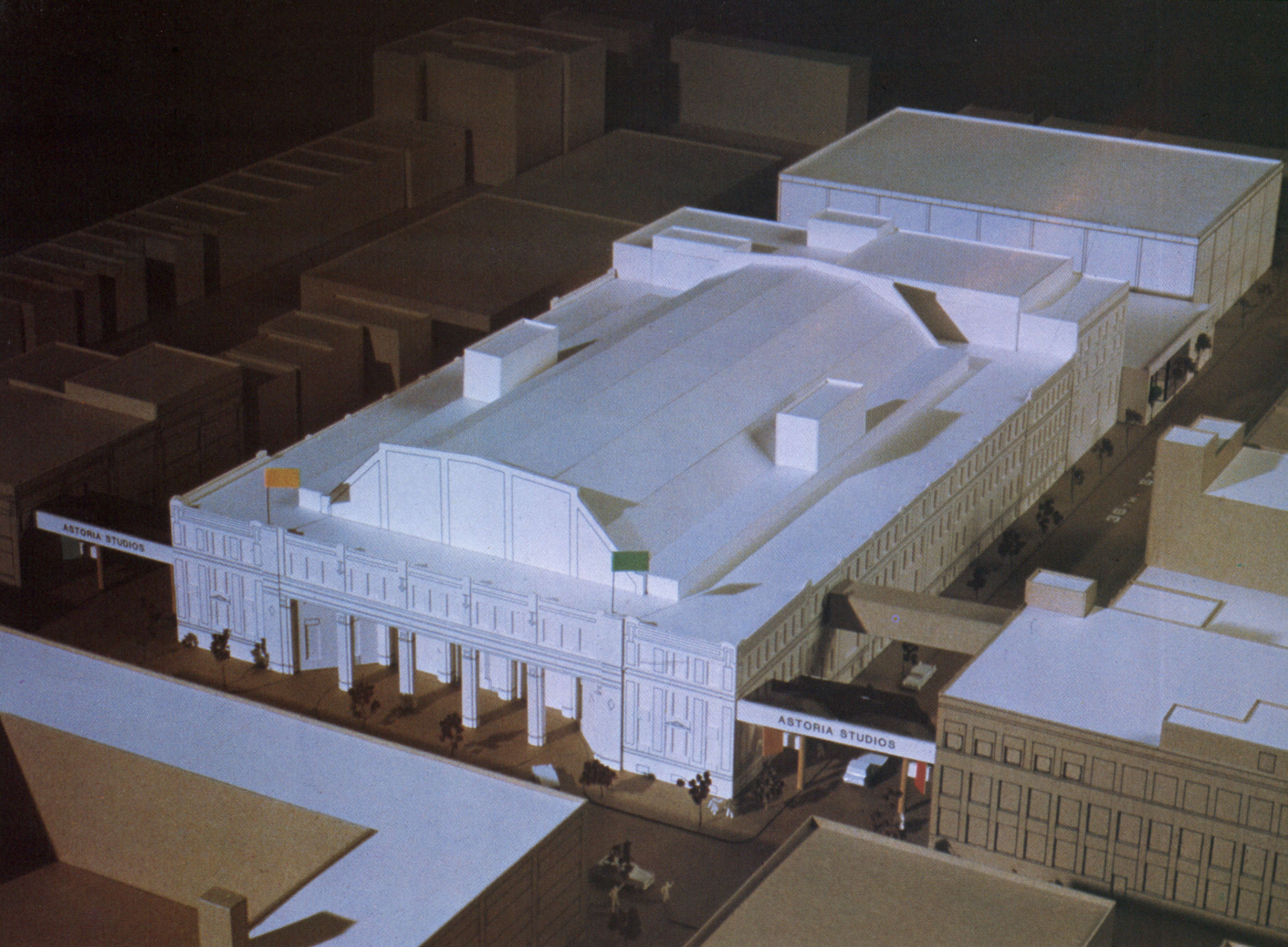
for a large number of skilled filmmakers, the office of the mayor, the film unions and many talented filmmakers together launched a program to encourage film and video production in the New York area. The Astoria Motion Picture and Television Center Foundation was formed to re-activate the Astoria Studio. The program was eminently successful and many major feature films have already been produced at the studio, including *THE WIZ*, *ALL THAT JAZZ*, *HAIR*, *FORT APACHE* and *WOLFEN*.

Problems of Filming in the New York Area

Despite the high degree of competence of its technicians, and the substantial facilities in New York, many problems made it difficult to function efficiently. Because it is a crowded, densely-packed island, space is at a premium. Parking is inadequate and expensive, and traffic is impossible at certain times. The facilities to support production, including stages, offices, laboratories, and shops are spread throughout the area and sometimes difficult to reach. There is no center of assistance or coordination. A few of the unions are not too cooperative from the point of view of developing fraternal relations with California unions or California filmmakers. Thus it is not easy for an out-of-town production to function, and a strange out-of-town producer has great difficulty organizing his pre-production activities efficiently.

The venerable Astoria Studio as it appeared before the current ambitious redesign and reconstruction effort began. From 1921 to 1927, 110 silent films were produced here, with 35 sound films being made between 1927 and 1931. After that, due to the move of the film industry to California, the studio fell into disuse and, during World War II, became the U.S. Army Signal Corps Photographic Center.



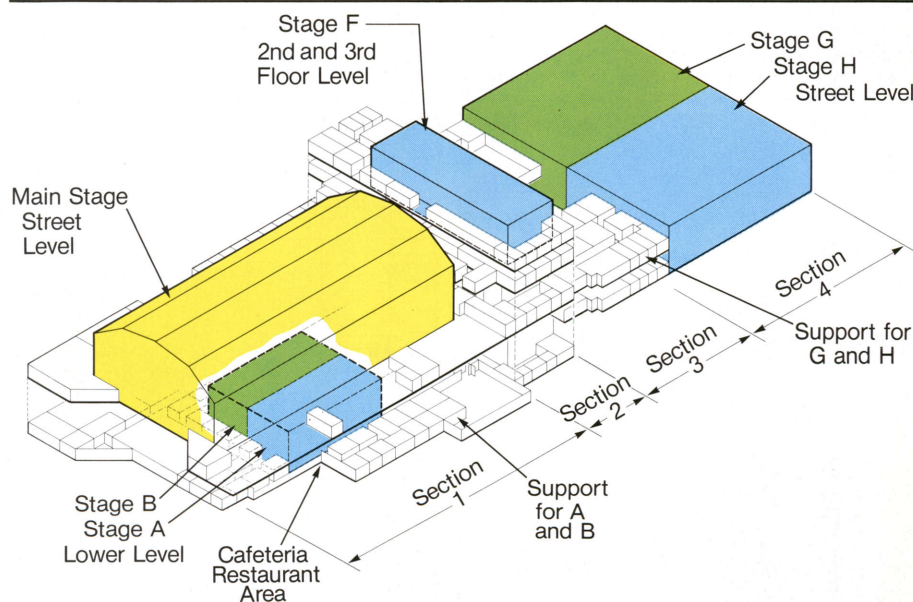


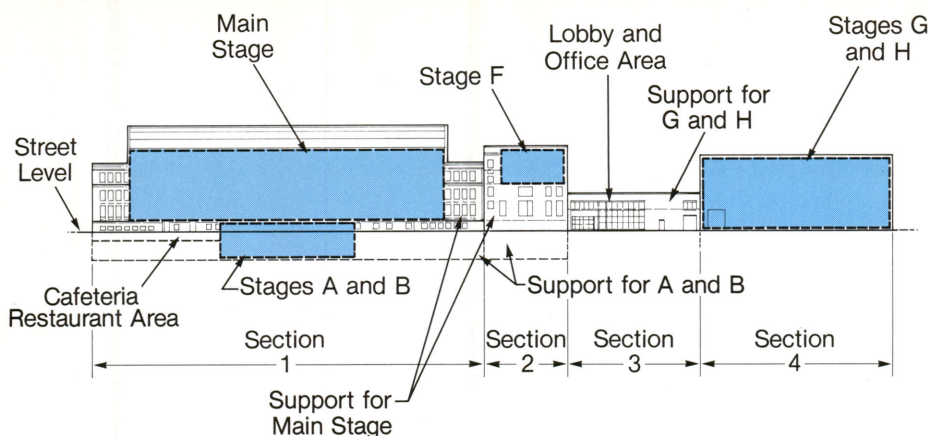
Model of the new Kaufman Astoria Studio complex. The building in the foreground is the old landmark facility which houses the largest sound stage in the United States, outside of the Hollywood area. The rear two buildings will house two large modern stages and an efficient support system. (Photograph by NELSON MORRIS.)

Advantages of Filming in New York

With all of the above difficulties, there is a charisma and a reservoir of competence which has made the New York area very attractive. Because of the long history of film and television production in New York, a strong group of competent technicians has developed over the years. Excellent processing laboratories, special effects and optical effects houses, editing facilities and other required back-up for production exist in the area. The requirements of production for commercials have re-enforced these facilities and competence. Added to this, the cooperative attitude of the City of New York and some of the unions have made it very desirable for productions of all types and sizes. The question was merely one of organizing a system of correcting whatever weaknesses existed and making it easy to come and work in New York. *THE SITUATION WAS RIPE FOR SOMEONE TO COME ALONG AND TAKE ADVANTAGE OF THE SITUATION.*

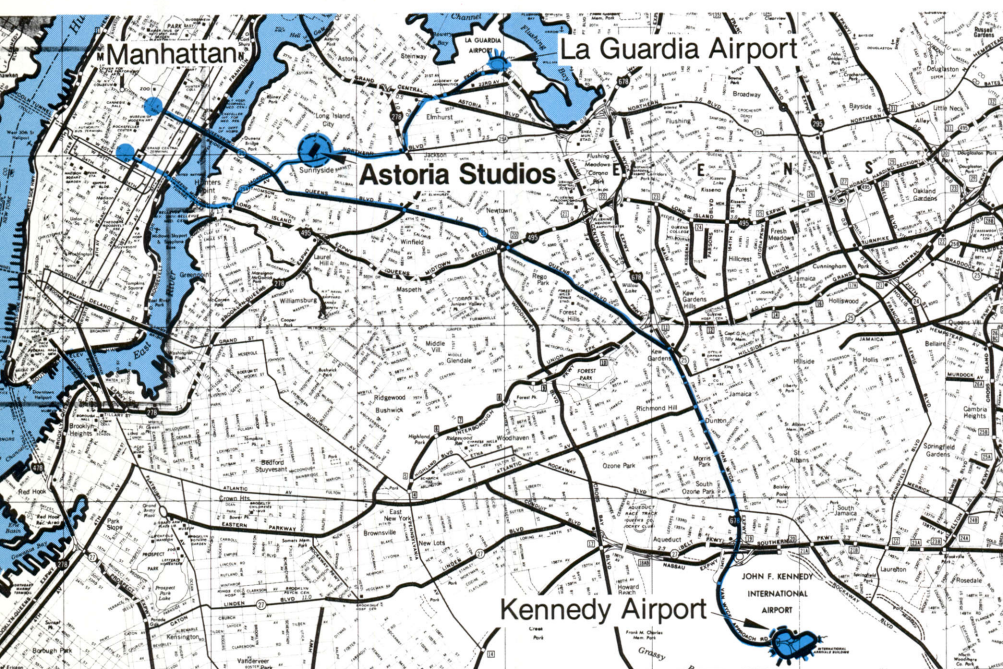
Overall view of the new Kaufman Astoria Studio. Upon completion, the complex will have a total of six stages, each with its adjacent support areas. A modern restaurant-cafeteria facility will be available at the street level. The complex is conveniently located for easy access to central Manhattan and the main airports.





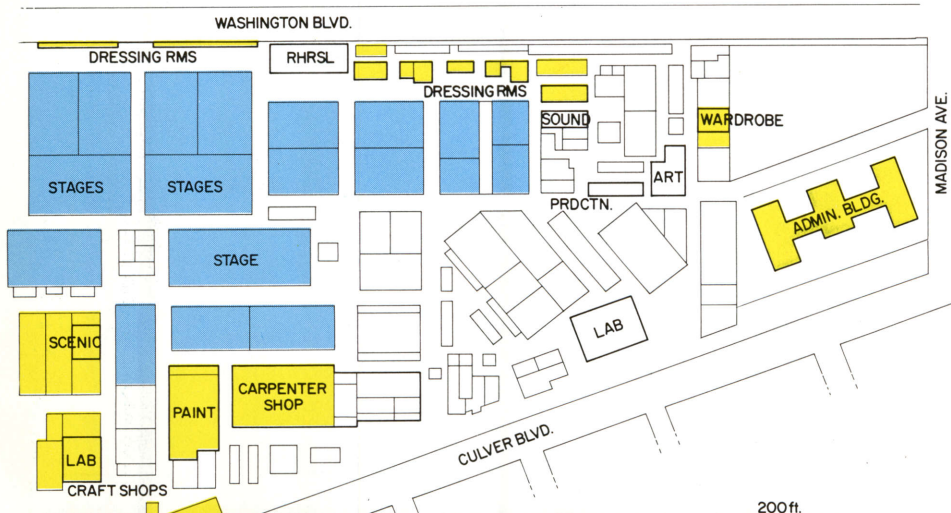
Sectional view of the new Kaufman Astoria Studio. The three large stages are on the street level, as are their support facilities. (BELOW) The complex is conveniently located 3 miles from 59th Street and Fifth Avenue, Manhattan, 4½ miles from 42nd Street and Fifth Avenue, 3.2 miles from LaGuardia Airport and 10.5 miles from Kennedy International Airport.

ASTORIA STUDIOS AND SURROUNDING AREA



Layout of the MGM Studios. The spasmodic growth of the film industry and the centralized control of production dictated the layout of the old studios. Under these conditions, support areas could not be placed for their most efficient use. (NOTE: The stages are shown in blue. The support areas are in yellow.)

METRO-GOLDWYN-MAYER STUDIOS



The Birth of the "Kaufman Astoria Studio"

In 1980, a "non filmmaker," Mr. George S. Kaufman, developed the concept of creating a modern facility in New York to service the film and television industries.

Mr. Kaufman is a real estate developer with some previous experience in the entertainment business. Basic to his plan was the utilization of the Mayor's office of New York, the New York State Government, and the Federal Government.

The project could only be economically justified if financial grants and low-cost loans could be made available through those governmental agencies.

All of the above agencies did put together an assistance package which supplied about 50% of the funds necessary to finance Phase I of the program. George Kaufman organized a private group to supply the rest of the funds. This group is composed of Neil Simon, Johnny Carson, Alan King and James Nederlander.

For developing the design and detailed concept of the facility, Mr. Kaufman employed the architectural firm of Henry George Greene, AIA of New York, and myself as Chief Consultant.

Analysis of Existing Studios

Since we had the experience of surveying almost all of the studios and stages of the world, reported on in the book* published by the Motion Picture and Television Research Center, we were rather familiar with the philosophy and organization of studios and stages. We carefully re-examined the various studios in Hollywood and the Los Angeles area and found that although their organizations fitted their own historic and functional needs, they did not necessarily fulfill the needs of productions which would come to New York.

In most instances, the Hollywood studios were not planned from scratch. They grew "by themselves" as the industry developed. Also, they grew when each studio was under centralized control. Many productions were underway simultaneously, and all for the same organization. The planning and servicing was done for the best interests of the studio itself, and not necessarily for the greatest efficiency of any single production.

As a result of this history and organization, the studios serviced the individual productions from central craft and service centers. Thus, all the productions were serviced from a single carpenter shop, a single camera department, a single set dressing shop, a single set of dressing rooms, producer's and director's offices and so on.

This resulted in a studio layout which

was not optimum for one individual production. The various service functions were not necessarily conveniently located for the particular stage being used, and the equipment available was not of equal quality to service all the productions during a busy season.

Can the New York Area Be Serviced from "Astoria"?

An enormous amount of production for film and television takes place in New York. By that we really mean Manhattan, a small island of very high density in terms of people and buildings. Rental space is at a premium, traffic is impossible, and parking is inconvenient and exorbitant.

Astoria is part of the "mainland", reached by the 59th Street bridge, the Triboro Bridge, and the Midtown Tunnel.

For elegant dining and night life, there is no equal to Manhattan. For convenience and hassle-free working and living, there is almost no worse place.

The relative accessibility of the Astoria Studio is as follows:

To the center of Manhattan: 50th Street and 5th Avenue—3 miles or 15 minutes.

To the center of Manhattan: 42nd Street and 5th Avenue—4.5 miles or 15 minutes.

To LaGuardia Airport: 3.2 miles or 10 minutes.

To Kennedy Airport: 10.5 miles or 25 minutes.

Certainly the accessibility of the Astoria Studio is equal to, if not more convenient than, the studios in the Los Angeles area.

Hotels and restaurants are available in the local area in addition to those in nearby Manhattan.

Characteristics of Production in the New York Area

An enormous amount of film and television production takes place in the New York area. There are existing facilities to handle a great deal of it. However, there are certain types of production for film and television which are not serviced with the greatest efficiency and flexibility.

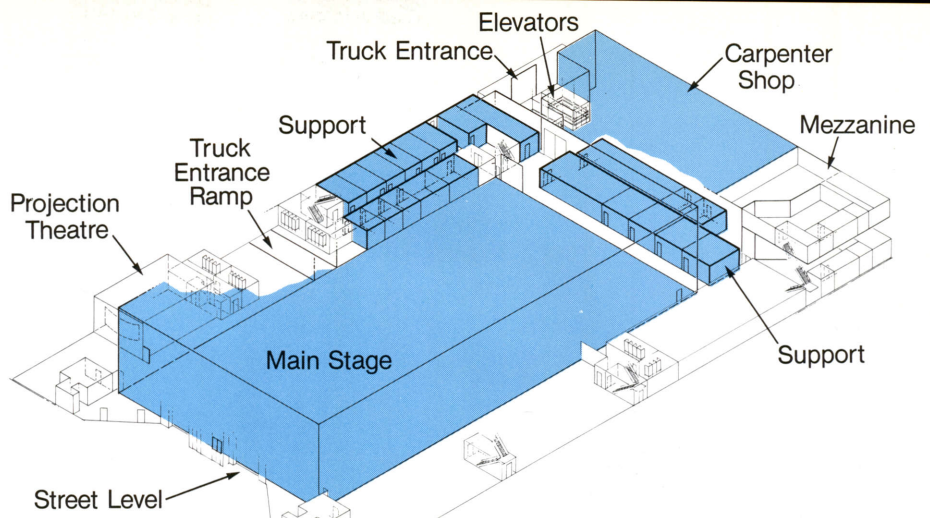
The character of these productions are:

1) Full feature productions which require both stage and location support.

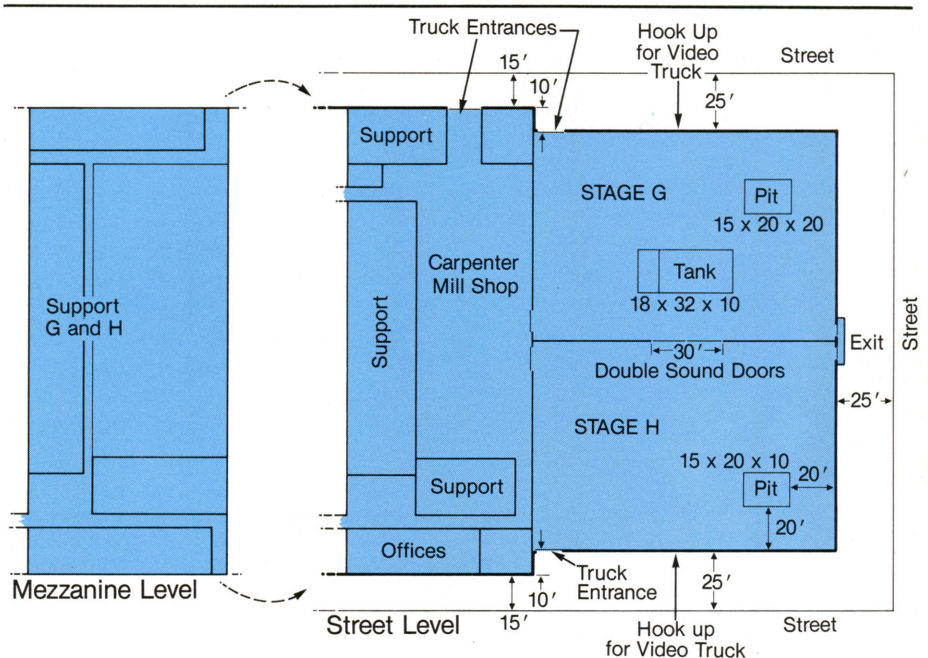
2) "Movies of the Week" type production for television which requires both stage and location support.

3) Basic location productions which require only location support.

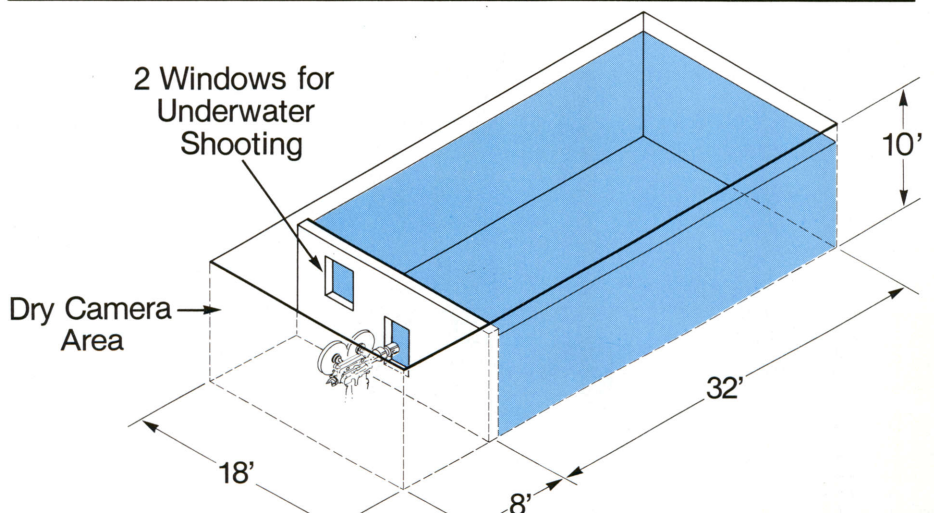
4) Basic stage productions which are done in New York for various reasons, such as the desire of the Producer or Director to work in New York, the inability to schedule a production in Los Angeles, the

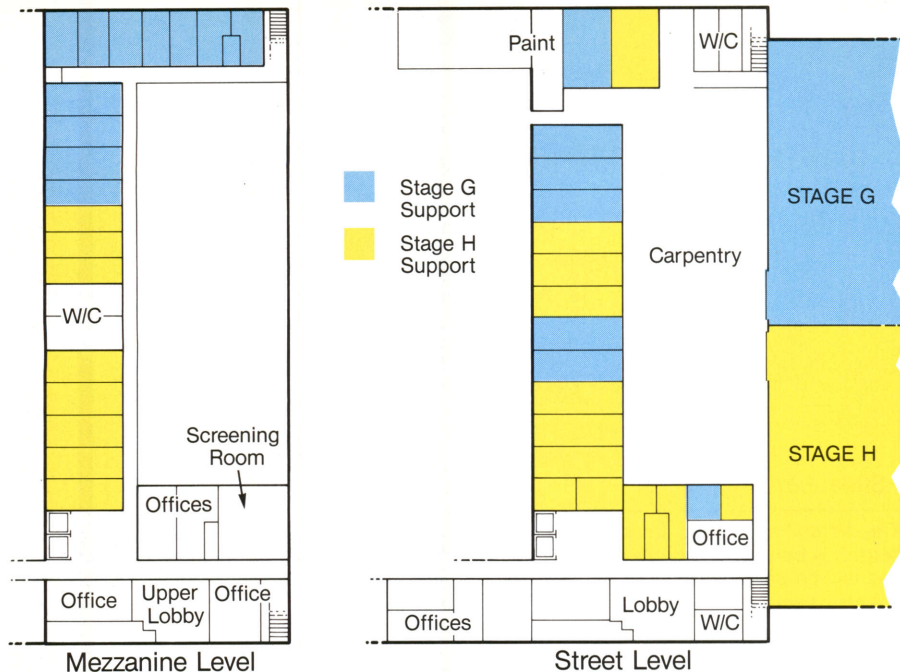


The "Main" stage and its support. This large, 26,000-square-foot stage, with its 40-foot height, is being upgraded and modified. It will have complete and excellent sound isolation and will be serviced from street level. It will include new and modern offices for producer, director, secretarial, production, production design, etc.



New stages "G" and "H". In order to provide for sound integrity of both, each stage is in a separate building. (BELOW) Tank (swimming pool) on Stage "G" is 18 feet wide, 40 feet long, 10 feet deep and has been designed for multiple use: swimming pool, special water effects, fountain. For underwater shooting, there is a dry compartment with windows looking into the tank.





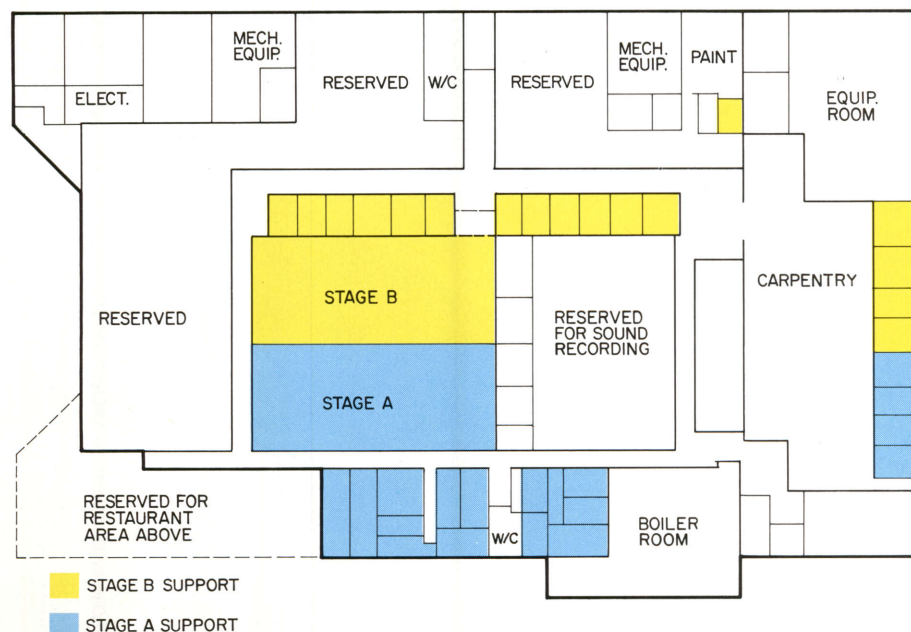
Layout of support areas for "G" and "H". The street level contains individual facilities for the supply of equipment and material to each stage. The mezzanine area has producer's, director's and secretarial offices, plus dressing rooms for stars and extras. Full details of the facilities for each stage are shown in the table on the opposite page.

unavailability of a large enough stage, etc.

Note that most of the above refer to film-type production. In addition there have been requirements for production facilities to house "live" audience participation shows for television. There have even been requests for proper facilities for situation comedies to be produced in New York.

It would be an illusion to think that there is such a mass of continuous demand for studio facilities that there is no limit to the amount of stage space which should be built. The character of much of the above production is such that sometimes the demand for space comes at the same time, giving the illusion that more is required than is really needed in a practical way.

The lower level, including stages "A" and "B". Two good 3,600-square-foot sound stages, 90' by 40' by 18' high, are being modified by adding a simple, convenient grid. Adjacent to each stage will be newly constructed support facilities. Provision is being made for efficient access to and from the lower level for the handling of equipment. All support facilities, including production offices, will be on the same level as the stages. In addition, this level has a large area for sound recording.



Basic Philosophy of the Kaufman Astoria Studio

Since the Studio would be basically servicing the independent type of production, it was decided to design the studio for the greatest convenience to the independent producer and the production which is "away from home."

Because of the high cost of labor and "lost time", every effort was made to arrange the relationship between the shooting stage and the support areas for a smooth flow of labor and materials, avoiding, where possible, double-handling of equipment, sets, lumber, and the like. In addition, the layout allowed for each stage to be used without interference from other productions.

In this way, each producer could control his scheduling, since his support facilities would be exclusively available to his production. Various types of facilities and space would be grouped to promote efficient flow. For example: the star dressing rooms, the extra and support dressing rooms, the wardrobe area, the make-up rooms, would all be adjacent to one another. In the same way, the carpenter shop, set dressing area, lighting storage, camera and grip shops would be almost adjacent to the stage itself. **AND ALL THESE AREAS WOULD BE EXCLUSIVELY UNDER THE CONTROL OF THE INDIVIDUAL PRODUCTION.** In many cases we traded space for efficient control and layout.

Priorities for the Development of the Kaufman Astoria Project.

Although the deal that George S. Kaufman made with the City of New York and the Astoria Motion Picture and Television Center Foundation was for the use of four plots of land, as shown on the plot plan, it was decided to intensively develop for Phase I only one of the areas. The entire block, which contained two existing buildings with four stages of varying sizes and a large undeveloped area, was to be the center of the new KAUFMAN ASTORIA STUDIO. The two existing buildings with the four stages were to be completely reorganized and refurbished. The adjacent lot was to be used to build two modern stages with an adjoining support area. The detailed design of each area was to follow the philosophy previously discussed. This meant that the new facility would have a total of six stages. Three of these would be large shooting stages, one would tend to service a certain type of television production and two would be available as "cover" for film production and commercials.

Experience indicated that this complex would be economically justified from an

Physical Specifications for the Six Stages

investment point of view. Time and further experience would tell whether additional stage and support space could be justified.

The New Studio and Advanced Technology

Up to now we have only discussed the production needs. If the studio complex is to fulfill the full needs of an industry which is in the process of change and development, provisions must be made to fill the **PRE-PRODUCTION NEEDS AND POST-PRODUCTION REQUIREMENTS**. Fortunately, the existing two buildings of Phase I have a substantial supply of space after provision has been made for the production process itself. Therefore, the plan is to include the potential for proper pre-production and post-production capabilities.

To take care of the problems of pre-production is not too difficult. Space must be allocated and a system must be organized to bring within the central studio complex: the location search services, the representatives of the City of New York to facilitate permit procuring, the coordinated purchasing help for all materials required, etc. In other words, the Kaufman Astoria Studio will become a center which will offer the out-of-town producer and production manager a one-step home and location for him to be able to organize his production.

Post Production for Film and Video

It is not the intention of the Kaufman Astoria Studio to build, organize and manage the complex technology required for special effects, optical effects, electronic editing, laboratory functions and the like. Instead, it is the policy to select the most skilled and competent organizations and provide them with the most ideal physical facilities, so that the Studio will become the center to service all aspects of film and television production as required by the parameters of this type of independent production. **THE KAUFMAN ASTORIA STUDIO DOES NOT INTEND TO COMPETE WITH THE EXISTING EXPERTISE.** On the contrary, **ITS INTENTION IS TO UTILIZE THIS EXPERTISE TO SERVICE THE NEW YORK AREA AND THE EAST COAST.**

The Design of the Two New Sound Stages

Two completely new building sections will be built adjacent to the existing main stage and support areas. They will be composed of one section which will include two 12,000-square-foot stages, 35 feet in height, to a modern grid similar to that used in the new stages at Samuel

Stage	Size (sq. ft.)	Length (ft.)	Width (ft.)	Height (ft.)	Location	Level
Main	26,400	220	120	40	Section 1	Street
A	3600	90	40	18	Section 1	Lower
B	3600	90	40	18	Section 1	Lower
F	5400	120	45	20	Section 2	Second
G (new)	12,060	134	90	35	Section 4	Street
H (new)	12,060	134	90	35	Section 4	Street

Goldwyn Studios in Hollywood. The second section will be adjacent to the stages, but be constructed as a completely separate building for sound isolation. This section will house all of the shops, the dressing rooms and other support facilities.

Each stage is actually a separate isolated building. However, the two stages

can be connected through a double set of 30-foot-wide doors.

One of the stages contains a tank or swimming pool 18 by 40 feet in area. In addition there is a dry wall permitting shooting into the tank itself. Both stages contain 15 x 20-foot pits, 10 feet deep.

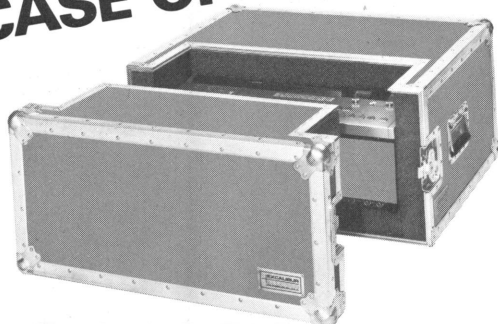
Continued overleaf

Chart showing the availability of support facilities for each stage. These facilities are available to each stage without any interference from other productions which may be in progress within the studio complex.

Quantity of Facilities Available for Each of the Six Stages

Facility	Stage					
	A	B	Main	F	G	H
Carpenter Shop	1/2	1/2	1	0	1/2	1/2
Carpenter Office	1	1	1	0	1	1
Paint Shop	1/2	1/2	1	0	1/2	1/2
Set Dressing Shop	1	1	1	1	1	1
Grip	1	1	1	1	1	1
Electrical	1	1	1	1	1	1
Camera/Sound	1	1	1	1	1	1
Prop Storage	1	1	1	1	1	1
Wardrobe	1	1	1	1	1	1
Scenic Storage	0	0	1	0	0	0
Producer Office	1	1	1	1	1	1
Director Office	1	1	1	1	1	1
Production Office	1	1	1	1	1	1
Art Dept., Production Design	1	1	1	1	1	1
Rehearsal/Conference Room	1/2	1/2	1	0	1/2	1/2
Star Dressing Room	2	2	3	2	3	3
Extra's Dressing Room	1	1	3	1	2	2
Secretary	1	1	1	1	1	1
Make-up, Hair	1	1	1	0	1	1
Make-up	1	1	1	1	1	1
Extra's Lounge	1/2	1/2	1	1	1/2	1/2
Editing Room	1	1	1	1	1	1
Accounting	1	1	1	1	1	1

VCR IN-CASE OPERATION



**SPEED UP YOUR SET-UP...
OPERATE YOUR VCR IN THE CASE!**

- SLIDE-OFF LIDS, GROOVED TRACKS
- REAR CABLE ACCESS
- ETHAFOAM SOUND PROOFING
- VENT SPACE UNDERNEATH
- AIR FLOW THROUGH REAR

THE INCASE BY EXCALIBUR.

CALL FOR INFO
213/899-2547

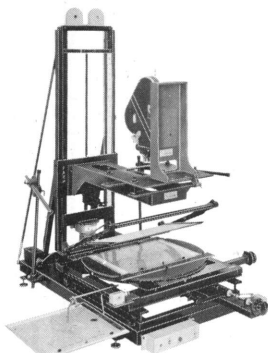
EXCALIBUR INDUSTRIES

12427 Foothill Blvd., Lake View Terrace, CA 91342 · (213) 899-2547

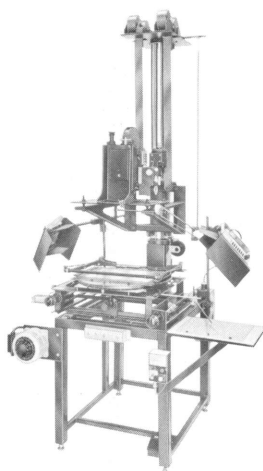
For Animation **THRIFTFAX** Camera Stands

Ask us about

'JR.' THRIFTFAX



Versatile, accurate,
productive



THRIFTFAX 'SR.'
Top performance

MINI-THRIFTFAX



For the mini-
budget

For all ANIMATION/TITLING/FILMSTRIP production and preparation equipment, for animation supplies of all sorts, get the facts, first, from FAX Company. A two-part descriptive price list covering "The Mechanics of Animation" and "The Art of Animation" is yours free, on request. Tell us of special needs.

FAX COMPANY

374 S. Fair Oaks Ave., Pasadena, Calif. 91105 — 213/681-3084

The Grid of the New Stages

The design of the grid will conform to the standard method of operation as practiced in American film studios. However, the members of the grid itself are so arranged that standard-type lighting supports, as applied in American television studios, can be easily adapted. This includes the capability of using either pipe battens, monopole-type telescopes or parallels.

Since the probability is that these stages will be used mainly for film production requiring the ability to erect and support very solid and well-constructed sets, the grid will be of wood, permitting the most efficient and low-cost method of nailing supports. The floor will also be made of wood to permit the same type of nailing.

Electrical System for the New Stages

Since the power for the stages will be 120-volt A/C, the cost for remote and dimmer control is relatively low and simple, as compared to the direct current used in most of the Hollywood stages. One of the new stages will have the provision for solid state, TV-type dimming. Both stages will have provision for remote control of all of the circuits. The distribution of the circuits will be basically from the grid level, with auxiliary circuits available at the floor level.

Refurbishing the Large Main Stage

One of the great assets of the Kaufman Astoria Studios will be the modernization and upgrading of the excellent 26,000-square-foot stage which was the basis of the original Astoria Studio. This stage, with a clear height of 40 feet to the bottom of the grid, is easily capable of handling large and complex productions. It has the basis of a good electrical distribution system which will be updated and it will be provided with an efficient system for proper remote control.

Support Facilities for the Main Stage

The old, existing main stage was very poorly arranged with respect to support services. The carpenter shop was located at a cellar level, requiring the use of a freight elevator to feed both the shop itself and the stage when sets were required. The entire layout and support facilities have been redesigned. The stage itself will be isolated from the flow of traffic. The sound insulation will be refurbished and new sound doors installed. All of the support areas will be on the same level as the stage and organized for a simple flow of men and materials. This will include the new dressing rooms, make-up rooms, wardrobe, and so on.

Auxiliary Stages "A," "B" and "F"

On the lower level are two small stages each of which are 36,000-square-feet in area, with a height of 18 feet clear. Although they are not of the size and height to handle certain types of film production, they are extremely useful for smaller film requirements, including commercials. These two stages are being redone with respect to sound insulation, electrical distribution, and particularly, support space. Each stage will have the same type of independent and individual support system as previously discussed. Compared to other facilities in the New York area, these stages will be a delight to work in.

On the second level, in Section Two of the existing buildings, there is an interesting stage which has its special use. Its dimensions are 45 feet wide by 120 feet long, with a clear height of 20 feet. The floor is a smooth television-type floor for appropriate use of a television pedestal. Our program calls for a redesign of the grid and electrical system to accommodate television-type shooting.

Air Conditioning for New York.

Provision is being made to install air conditioning in all of the newly-constructed areas and to air condition all of the office and service areas in the old, existing buildings. Stages "A," "B" and "F" will also be air conditioned. The "main" stage will be properly ventilated and provision will be made for portable, local, area air conditioning.

Summary of Stage Facilities

The building and refurbishing program will result in the Kaufman Astoria Studio being able to supply three major stages, each of which could handle a major film production **WITHOUT ANY INTERFERENCE FROM OTHER PRODUCTIONS.**

In addition, there will be two "miscellaneous" stages, plus one TV-oriented stage. **THE CAPACITY OF THE STUDIO WILL MAKE IT POSSIBLE TO HANDLE 6 TO 10 FEATURE PRODUCTIONS A YEAR WITHOUT ANY COMPROMISE FOR QUALITY OR EFFICIENCY.**

Restaurant and Catering Service

The old Army Pictorial Center had a cafeteria-restaurant. This area is conveniently accessible from the street and will be fully upgraded to serve as an attractive restaurant with the finest facilities for catering to productions which are using the stages or offices and catering to productions out on location.

Conclusion

For many good reasons—the stable, predictable weather, the "abundance" of

land, massive pool of technical expertise, and large-scale studio and stage facilities, the production and nerve center of the entertainment industry will remain on the West Coast. Yet there is a need for additional facilities and production capacity. New York, because of its history, technical know-how and varied facilities can be this center. It can act as the organizing center for much of the East Coast. It is the intention of the Kaufman Astoria Studios to fulfill much of this role.

Special Acknowledgements:

I want to acknowledge particularly the creative role of Mr. George Sawicki, Vice President, and Paul Benowitz, Project Architect; both of the Henry George Greene, AIA, organization. Also, I wish to thank Larry Barr, Executive Administrator of the Astoria Studios. The problems of developing an integrated facility using as a base a studio built 60 years ago were extremely complicated. Their help was invaluable. Drawings by Barron Postmus.

References:

"Motion Picture and Television Studio Stage Survey," Published by the Motion Picture and Television Research Center of the AMPTP. 1970, Author: Milton Forman.

"Design of Power Plant and Electrical Distribution in Large Studios" (Astoria Studio) by Jac. R. Manheimer from TRANSACTIONS OF THE SOCIETY OF MOTION PICTURE ENGINEERS 1920. ■

CINEMA WORKSHOP

Continued from Page 120

URE 2 indicates that the actual running time would be only 11 minutes, not 15.

In addition, FIGURE 2 indicates that the voltage is also reduced as current drain increases. While this effect is insignificant in most applications, it could cause severe problems for the unwary. For example, while the knowledgeable have shifted to 13.2 volt (or higher) Nicads for both cameras and VTR's, many still use 12-volt batteries for these applications. At the one or 2-amp drain of the devices, such batteries may be able to maintain sufficient voltage. However, if a portable light is attached to the same 12 volt battery, the current drain is increased to 9 or 10 amps, which will undoubtedly cause the voltage to drop below the point necessary for proper operation of the camera or VTR. ■

NOTE TO CLASSIFIED CUSTOMERS
Rates for classified ads will increase effective with the February 1982 issue. Please send payment with ad at 60 cents per word for light face; 80 cents per word for bold face or caps. Include \$3 extra for blind ads.



USED 16mm CAMERAS

Bolex H16 Leader	\$ 119
Bolex H16 Deluxe	\$ 179
Bolex H16M Body	\$ 199
Bolex H16 RX II	\$ 379
Bolex H16 EBM Complete	\$1199
Bolex H16 EBM w/POE	\$2995
Beaulieu R16 Mono Body	\$ 799
Beaulieu R16 Auto Body	\$ 899
Beaulieu R16 PZ 10x12	\$2999
Beaulieu R16 PZ 17-68	\$2399
Beaulieu R16 Auto 10x12	\$2199

USED ACCESSORIES

Bolex Sync Generator	\$ 119
Bolex Batt. Container	\$ 129
Bolex Matte Box	\$ 195
MST Motor Only	\$ 299
Bolex Rexofader 40	\$ 69
Charger for EBM	\$ 69
Bolex Exposure Meter	\$ 69
EBM Tripod Base	\$ 39
Filter Holder Kit Rx IV + V	\$ 49
Filter Holder Kit EBM	\$ 69
Electric Grip for Beaulieu	\$ 129
500 MA Battery Beaulieu	\$ 99
1000 MA Battery	\$ 169
Beaulieu Base w/Shoe	\$ 99
Arri 16S Matte Box (New)	\$ 299
Beaulieu DC Charger	\$ 59
Beaulieu Batt. Container	\$ 49
Beaulieu Dummy Socket	\$ 39
Beaulieu 90MA Charger	\$ 139
Beaulieu Rubber Eyecup	\$ 8

USED "C" LENSES

Angenieux 10x12 Auto Exp.	\$1299
Angenieux 10x12 Bolex RX	\$1149
Cinor 17-70 Arri Mnt.	\$ 199
Angenieux 17.5-70 Arri	\$ 179
Pan Cinor 20-60 "C"	\$ 99
Angenieux 12.5-75 "C"	\$ 399
Schneider 100 f2 Arri (New)	\$ 399
Schneider 16-80 Zoom "C"	\$ 499
Angenieux 50mm f1.5 (New)	\$ 699
Angenieux 75mm f2.5 "C"	\$ 139
Cooke 2.8" T2.5 "C"	\$ 139
Switar 25mm f1.4 "C"	\$ 89
Angenieux 100mm f2.5 "C" (New) ..	\$ 799

SOUND AND EDITING EQUIPMENT

Uher 1200 Sync Recorder	\$ 799
Optasound Sync Recorder	\$ 159
Zeiss Moviescope 16	\$ 249
Ceco 16 Viewer	\$ 149
Aerovox Full Coat Degausser	\$ 99
NCE Fluid Head Flap Base	\$ 249
500 ft. Split Reels	\$ 25
2000 ft. Split Reels	\$ 39
Ciro 16 Splicer (New)	\$ 229
Tiffen Series 9 Filters	\$ 23
Kodak Pageant 16 Projector	\$ 249
RCA 16 Sound Projector	\$ 299

We carry a large inventory of used and new Beaulieu and Bolex equipment.

For anything not listed, please call.

Bel Air Camera

1025 Westwood Blvd.
Los Angeles, CA 90024

**To order, call Toll Free
800-421-7469**

**Except Hawaii, Calif., Alaska, call
213-208-5150**

A MOVIE ROBOT IS BORN

Continued from Page 129

and movements. Although his mannerisms are somewhere between klutzy and lovable, he is capable of performing several practical functions, and is imbued with actual robotic potential.

"We had to ask ourselves what the 'child' of robots would look like," Blalack said. "All machines are created in the image of their makers, so in this case, we had to assume the machine's point-of-view. Phil had to mirror his parents' consciousness and look the way they'd have him look, because the design of any machine is an extension of its makers' vision of reality. Phil was also shaped by the needs of the script. He had to scoot over several kinds of ground surface; he was called upon to cut through a wire fence and pick up living objects. All this, plus enough personality to charm human audiences."

In Greek legend, robots were said to have been made by the gods themselves. But it was human intelligence and craftsmanship that produced Phil, and by the time he took his first jiggling baby steps, more than 30 men and women had worked on him. It got to be a lot like the *Heartbeeps*' story of parent-machines contributing their own parts to make the young machine efficient and complete. David Merritt, who spent the entire two-and-a-half month "gestation period" designing and assembling Phil's visually expressive but purely cosmetic brain unit, said he felt "like part of my own brain went right into Phil."

The star robot's aesthetic design had to stay within the limits of the practical mechanics of his movements, according to Chief designer Max Anderson. Brian Bevis was responsible for translating the design into mechanical drawings, and John Fifer and Larry Stevens carried out the mechanical assembly. Phil's drive-train mechanism had to be flexible enough to negotiate several kinds of exterior terrain, as well as interior carpeted floors. The low-mass, high traction system was finally based on a mini-bulldozer.

In the script, Phil is "born" from spare parts, and his parents add more parts to him as the film progresses. This haphazard development of Phil had to be considered in Anderson's design concept. "It is definitely makeshift looking," reads the script, "like the result of an illicit union between an old Philco radio and a soapbox derby racer." The old radio which was Phil's namesake became a truck dashboard unit, supposedly blow-torched from a junked vehicle by Phil's part-seeking parents, but actually lifted from Anderson's own '52 Chevy pick-up. The chest unit rests atop a six-wheeled treaded chassis. The torso tilts forward and backward at the waist, the neck moves up and down, and the head rotates.

"The electronics were actually the hardest part of making Phil," Anderson recalls. "For example, the different movements in the elbow joint, the wrist and the opening and closing of the hands each required a multitude of radio channels." The complex radio control system was designed by Neil Dreiscszun, Daryl Dzioba and Ralph Leitzgen, and involved split frequencies,

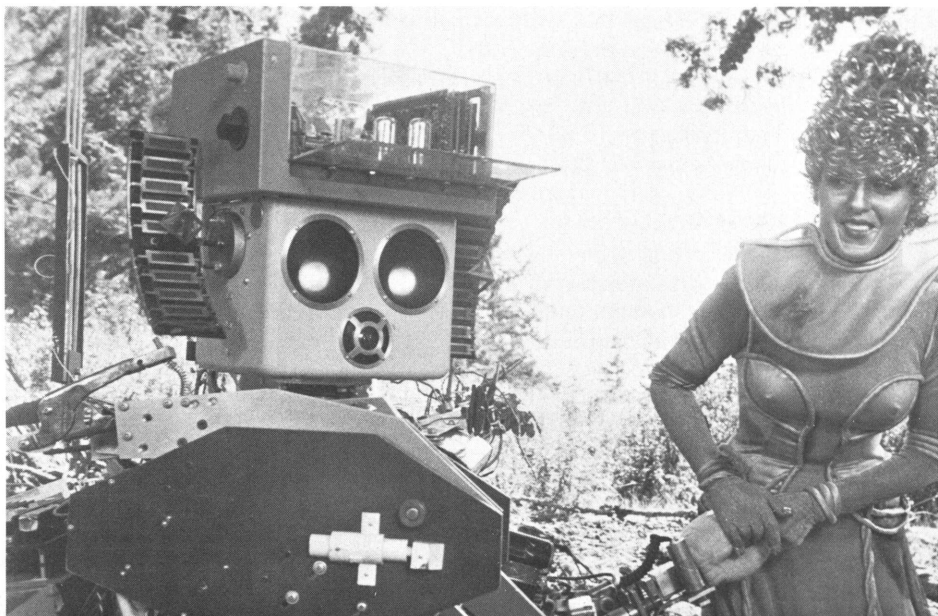
so that the various signals would not interfere with each other. Nonetheless, since the frequencies were all in the amateur band, there was the constant possibility of outside interference problems from CB type radios. The controls were standard six-channel units with uni-direction "joystick" levers, made by Futuba. "The four Universal operators who worked the controls literally became the means to express Phil's personality," said Anderson, describing the split-second orchestration required to bring the robot to life during filming. "It was amazing to watch them work."

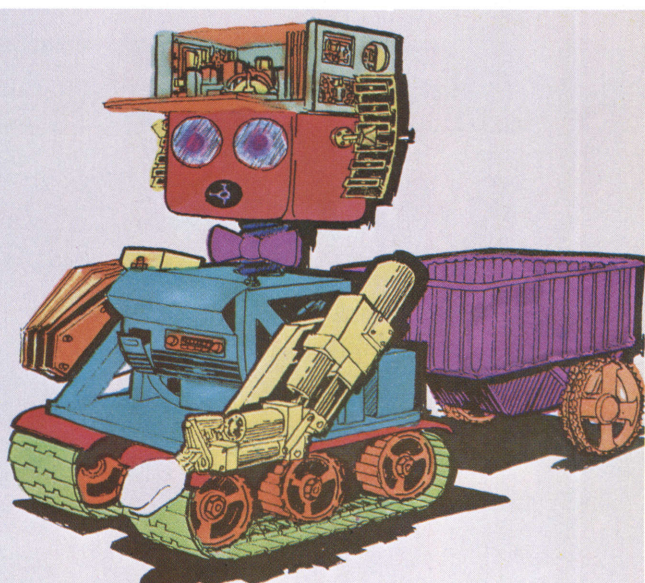
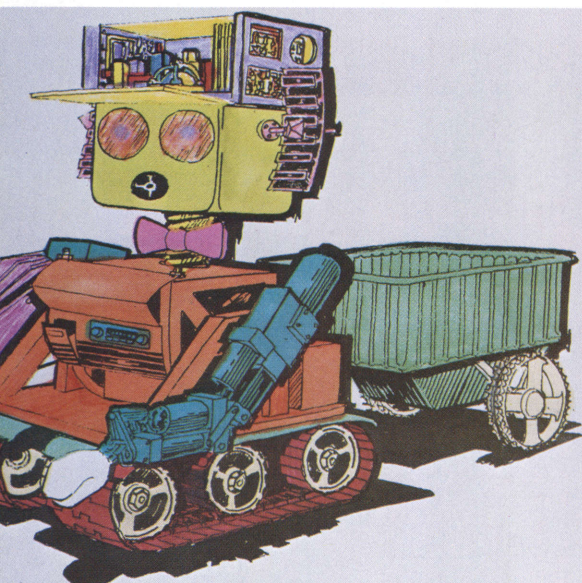
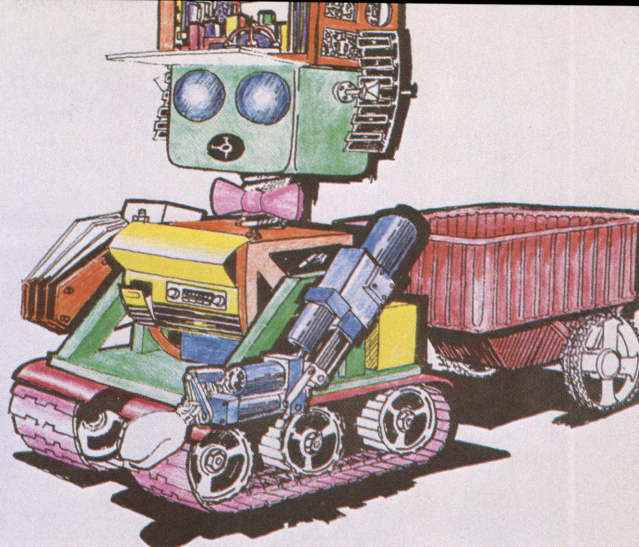
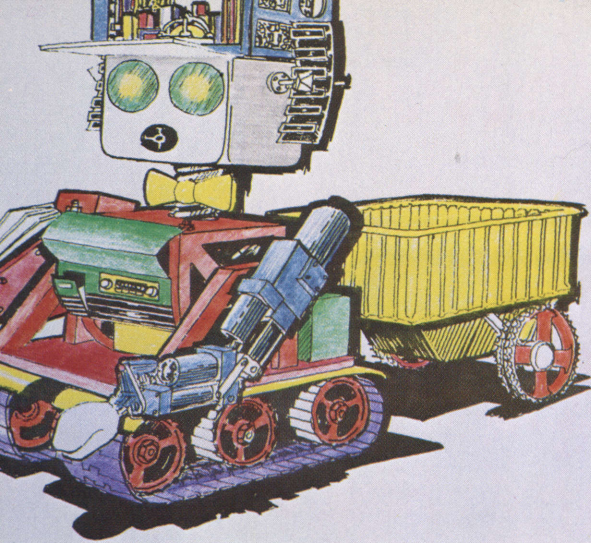
Designing the arms was another challenge, since Phil's hand and arm movements had to perform functions in the film that would surpass the capabilities of the most sophisticated robots in industry. Even in Japan, where most of the world's industrial robots are at work (75,000 of them), the development of automatic "hands" has not kept pace with science fiction projections. Phil would have to appear more dextrous, even, than his cousins in the nuclear facilities, whose remote-controlled arms have been called little better than pliers. Phil's arm units had to be capable of performing very subtle movements and carrying out practical tasks, as well as being able to make emotional gestures in the on-going body language that makes the character spring to life on screen. One arm was called on to cut through a wire fence, the other to pick up a live rabbit and other objects. MPI researchers found that nothing so advanced currently existed "off the shelf."

To find a working model for the arm



(LEFT) For *Aqua*, played by Bernadette Peters, giving birth to Phil in the forest was much like assembling an Erector set. (RIGHT) However, when the baby robot emerged as a lovable little creature with many of the characteristics of a human child, *Aqua* beamed at him with true maternal pride and affection. Mothers are mothers—even among robots.





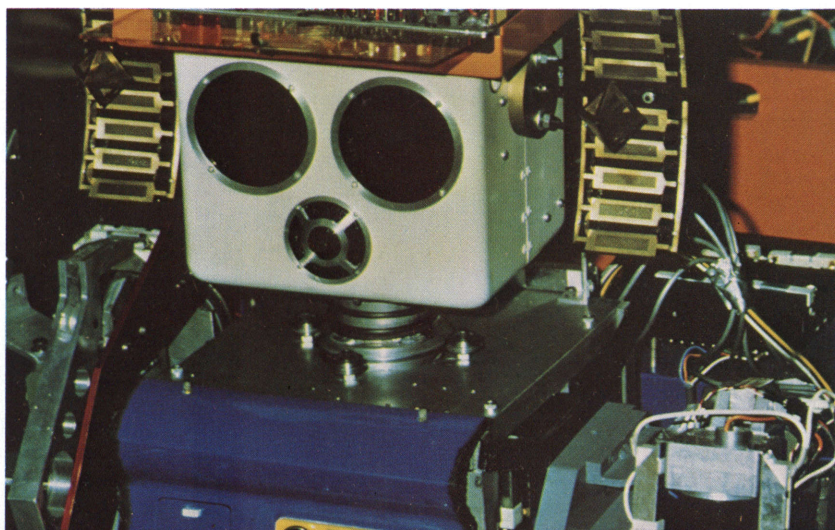
When Phil's design elements had been finalized in black and white, Robbie Blalack and Chief Designer Max Anderson Xeroxed 50 copies and gave them to HEARTBEEPS director Alan Arkush who was allegedly seen in several Los Angeles restaurants busily filling in the lines with colors until he arrived at the combination which best reflected the robot's personality. The actual painting of the robot was done by Pete von Sholly. (None of the above samples reflect the final color choices, nor were any of them executed by the dining doodler himself.)

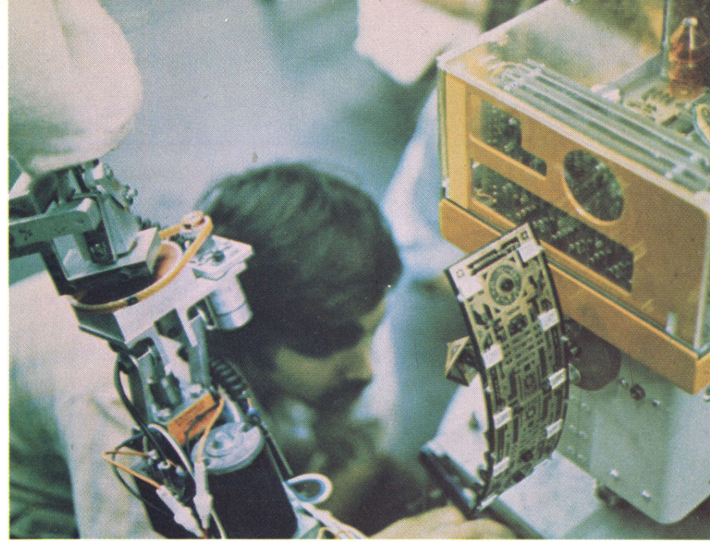
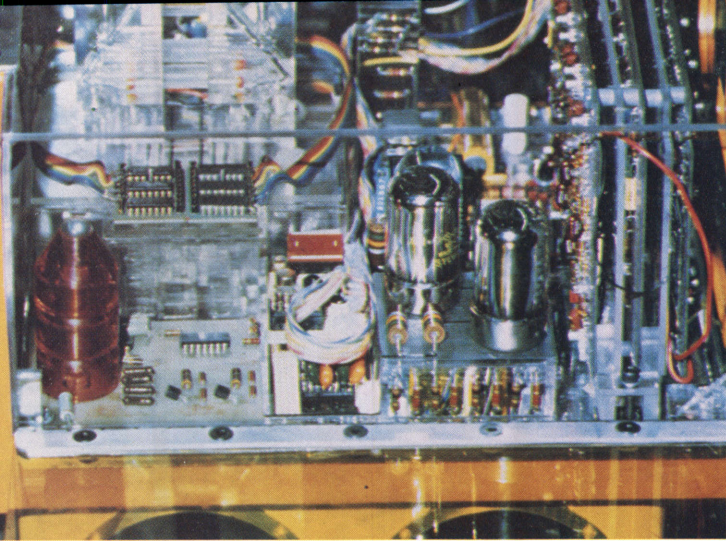
units, Blalack and his team even considered using the actual prosthetic arms created for humans who have lost their natural limbs. Instead, the design team created an asymmetrical set of working appendages that fulfill the practical and aesthetic requirements.

The left arm has human-like joint movements, rotating and twisting via radio control. Phil's one truly soft touch is the fuzzy cotton mitten which serves as his left hand (sewn by MPI accountant Julianne Berdrow), and has enough dexterity to grasp objects of varying sizes, and can even pluck a living flower from its stem.

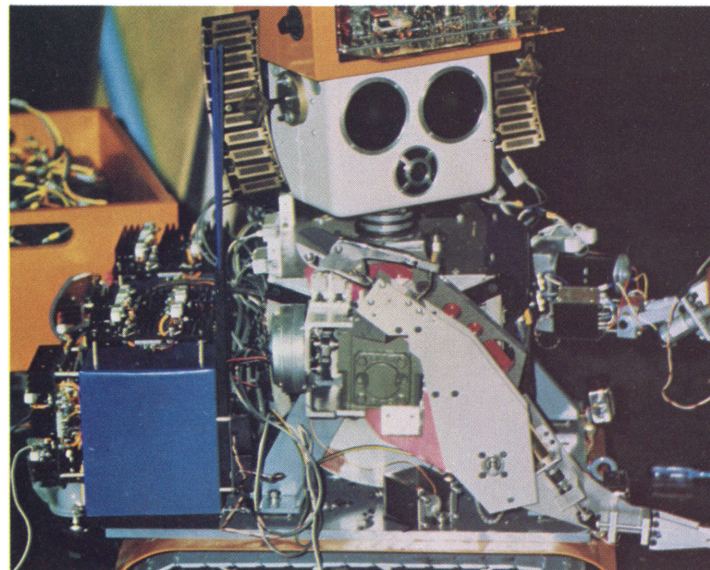
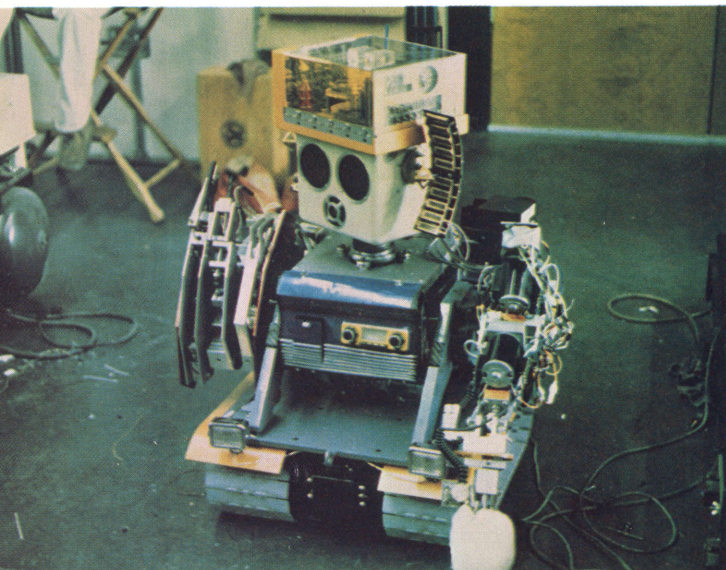
The right arm is the harder working of the two. Comparable to a Swiss Army knife (another symbol of boyhood incorporated into the design), its various components include a drill bit, screwdriver unit, adjustable wrench, and tin snips for wire-

The blue dashboard that constitutes Phil's torso rests beneath the robot's square metallic head. The torso is capable of tilting forward and backward. Phil obviously got his name from the old Philco radio which screenwriter John Hill envisioned as his first primary component. During the filming, actors and crew eventually reacted to him as a true human.



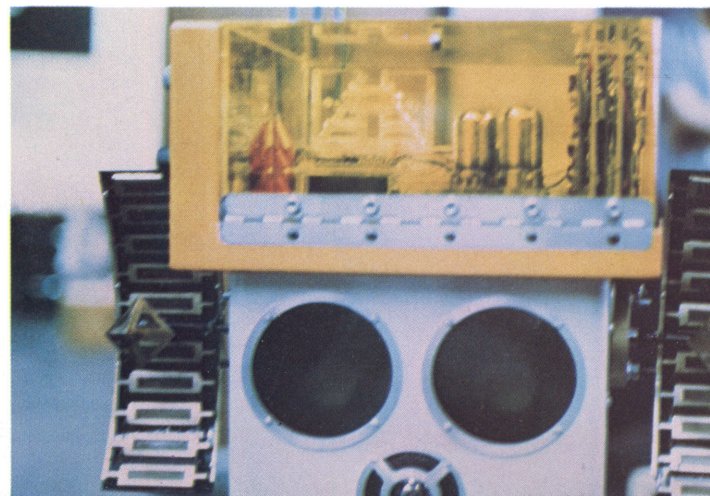
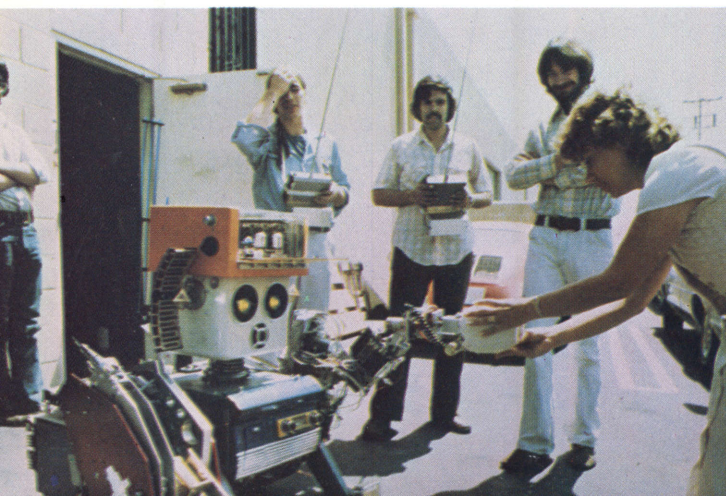


(LEFT) MPI's David Merritt based his robot brain unit design on charts of the human brain, dividing it into symbolic lobes and areas of function. At right, the circuit boards symbolic of memory and thought process; at the far left, the red light bulb that flares when Phil experiences anger. Another blue light indicates calm. (RIGHT) Neil Dreiseszun, who designed and assembled Phil's electronics (with Daryl Dzioba and Ralph Leitzgen) checks the vital assembly that enables the robot to perform a multitude of complex and subtle movements.



(LEFT) The first major film robot in more than 25 years to be fully articulated and not piloted by a hidden human was given shape and substance at the special effects facilities of Motion Pictures, Inc., whose co-owner, Robbie Blalack, received an Academy "Oscar" for Best Visual Effects in STAR WARS. (RIGHT) The electronic assembly that makes it possible for Phil to be capable of radio-controlled movement is revealed during this construction phase of development.

(LEFT) During a trial run outside the MPI facilities, Phil exercises his charm and extends one of his asymmetrical arms. His left hand is covered with a soft white mitten; his right is a Swiss Army knife. (RIGHT) A closeup of Phil's square head components, topped by his Plexiglass brain box and flanked by his radar-dish ears, capable of moving independently of each other. The round green glass eyes, which can be illuminated from within by lights that rotate on their axes parallel to each other, represent an idea that came from an Etch-A-Sketch the crew took during the three-month gestation and construction period.



cutting, all flipped into place by radio control. Only the drill bit is entirely functional; the other tasks are performed in close-up by a technician working through dummy arms, with a hand grip at the end of a cable.

In the world of actual robotics, Phil would be classified as a Level Two model, capable as he is of moving around and performing pick-and-place operations with a movable hand-arm assembly (and supposedly in possession of a television eye). But Phil is basically cosmetic in design, despite all his moving parts and convincing performances.

"The challenge with Phil was breaking down what goes into making emotions apparent on the human face, and then translating it into mechanical functions," said Arkush, who would have to direct these character reactions once the robot was a working cast member. Team brainstorming and individual craftsmanship produced the necessary results. Pete von Sholly (who also painted the body) fashioned Phil's radar-dish ears, which are individually controlled, moving independently of each other. His ears perk and bend to show emotion, but they are incapable of picking up a single sound.

Phil's head is square, animated by two large green glass eyes, which are illuminated from within by lights that rotate on their axes parallel to each other. As sensing apparatus, they cannot receive a single image.

Nor does the actual brain-box with its complex assortment of components serve any function paralleling Artificial Intelligence, although true-life robots are also lacking in that capacity. The design goal, however, was well served by the intricate assemblage of circuit boards, resistors, vacuum tubes and working lights that constitute the elements within Phil's transparent skull.

Merritt, who got his model-making start constructing dinosaurs for museums with his family's business, researched charts of the human brain. He decided to recreate a symbolic phrenology, with various sections representing the brain's different lobes and functions. Red lights flash when Phil is staging a temper tantrum; blue lights glow softly when he is tranquil. When Phil gets an idea, the computer circuit boards light up. For his highly dramatic moments of extreme rage or frustration, smoke is pumped through a plastic tube, filling the aluminum-plexiglass chamber and flowing out screen vents around his head and neck. Several of the brain modules can be removed as Phil "grows" in the course of his film life, and risers elongate the body. The neck stretches, and other components can be

MINNESOTA

*and the entire upper
midwest*

CINEQUIPT, INC. — The only full line dealer for motion picture equipment and supplies in the upper midwest. We sell, rent, and service Arriflex, Sachtler, Moviola, Cinema Products, Nagra, Lowel, O'Connor, Gitzo, Matthews, Bardwell, McAlister, Universal, Ediquip, Steadicam, Vega, Colortran, Sennheiser, Fairchild, and Angenieux.

CINEQUIPT, INC.

motion picture equipment

rental and sales

(612) 646-1780

2434 University Avenue, St. Paul, MN 55114

16mm ciné lens spectacular

SAVE UP TO 50% ON SELECTED

Angénieux - Canon - Zeiss ZOOM & PRIME LENSES

Most mounts and viewfinders available.
Quantities limited. Dealer inquiries invited.

Call Jack Zink at (201) 427-1160 or write



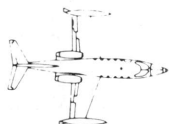
Frezzolini Electronics Inc.

7 Valley St. Hawthorne, N.J. 07506 USA

TWX: 710-988-4142

Continental Camera Rentals

Specialized Cinematography Systems



Astrovision

LEAR JET SYSTEMS Pan 360° Tilt 46°
in the slipstream. Pilot Clay Lacy.
Also Lear Jet Stock Footage.

Helicopter

CAMERA MOUNTS 16mm/35mm/75mm & Video,
Helicopters, Pilots, Crews, Worldwide.
Custom designed Jet Ranger III Camera
Helicopter, Los Angeles area.



P.O.V. Helmet CAMERAS

CAMERAS 16/35 Lightest pin
registered 35mm movie camera's in
the world. Sky diving and stunt
accessories.



Pitching Lens

Advanced, Portable, Fast 3.9 Relay lens.
For miniatures and Table-Top 7.5mm to 100mm.
For all formats, Super 8 to 70mm.

- Video assist for Arriflex & Mitchell cameras.
- Frame line generators for T.V. monitors
- Agents worldwide. Write for brochure.

- Body Mount Hand Held System.
- Seacam Underwater System.
- Helicopter Referral Service.

Continental Camera Rentals
7240 Valjean Ave., Van Nuys, Calif. 91406
one call does it all (213) 989-5222

The International FILM WORKSHOPS

*The industry's leading series of career development courses
for the working professional filmmaker*

Intensive one-week workshops

**Film Directing • Acting • Lighting
Cinematography • Camera work
The Steadicam • Special Effects
Commercials • Video**

You can spend a week studying with the world's
leading directors, cinematographers, and filmmakers:

**Mark Rydell • Vilmos Zsigmond • Laszlo Kovacs
Conrad Hall • Frank Stanley • Mario Tosi
Owen Roizman • Garrett Brown
... and others**

**1982 Winter Workshop series begins
February 12 in Monterey, California**

For complete information on these and other workshops, write or call

The International FILM WORKSHOPS

Rockport, Maine 04856 Phone: (207) 236-8581

Produced by The Maine Photographic Workshops

added to the brain-box as the young robot acquires more smarts.

Even in the film story, Phil lacks sufficient intelligence to protect himself. He can't handle pattern recognition and evaluation, prompting his robotic mother to seek new components for him with obsessive zeal. "This is the first robot I have ever created and programmed," she says. "He will be the most efficient I can make him."

Aqua also vows that Phil will never be programmed for subservience, the underlying theme of the film. She bemoans her own program as a companion-series robot designed to be a party hostess for humans. Her particular talent was "to give the human male social companionship... as well as assisting him in viewing himself as intelligent, interesting and virile." She and Val, (another companion-series robot programmed to talk the lumber commodity business, as well as to serve as a valet) parody human male-female relationships and parent-child roles.

Robots aren't supposed to be able to feel anything, and even Val and Aqua are new to the love game. The first twang of metallic love is at first interpreted as a malfunction of the Pleasure Zone Indicators, but free will slips into their program, and growing concern for Phil gives them depth and compassion.

The idea of humans owning mechanical servants goes back to Greek legend, where Haphaestos, the blacksmith of the Olympian gods, possessed two golden slave girls. They were made of metal, says the legend, "but they do my bidding, and they have thoughts in their heads."

And the postulation of robots falling in love is at least as old as the word robot itself, which was first used by playwright Karl Capek. His 1921 Utopian drama *R.U.R.* first put robots on stage, and he drew from his native Czech tongue's *robot*, meaning toil or servitude. Actors portrayed the mechanical men who seize power and wipe out humankind, but they are unable to reproduce until two of the younger robots fall in love.

Throughout the course of science fiction, robots have been depicted as a possible menace to their human bosses, either as a dehumanizing machine that would replace non-machines, or as an actual threat. Hal, the sentient computer of 2001: A SPACE ODYSSEY, turned against the very humans he was designed to serve. The word "robot" is also derived from the Old German *arbeit*, meaning trouble! It's older Latin origin, however, is in the word *orbus*, or orphan.

Phil, however, is no orphan. Not only does he have parents willing to sacrifice their own spare components ("Look at Phil, Aqua, it has your eyes." "Yes, Val, but

it has your nose.") he also has an "uncle." Accompanying the family on its freedom mission is CatSkil, a one-liner Borscht-belt comedian robot whose voice is supplied by comic Jack Carter. Not an actual robot like Phil, CatSkil is partly MPI-built robot base, partly hidden actor. A special-effects operator controls the cigar-smoking CatSkil's facial movements. Another partial robot, CrimeBuster, a menacing law enforcement model, is operated by two hidden humans, with another operator outside to control its machine guns, flame-throwers and other lethal weapons.

Other humans round out the cast: Randy Quaid and Kenneth McMillan play human factory workers who pursue the missing robots. Melanie Mayron and Christopher Guest are featured as the eccentric junkyard owners who take the fugitive robot family under their wings.

During shooting, Arkush directed Phil the same as he did the rest of the cast. "Hit your mark," he'd call out to Phil, and the four-person control team would respond, hitting the appropriate joysticks.

Phil didn't have any actual lines to deliver, but he is called upon to produce electronic giggles, cries and other responses. His actual musical voice is played on guitar by The Grateful Dead's Jerry Garcia. There is complex dubbing for the extensive sound effects. "Whenever a robot moves, it makes lots of sounds," Arkush says. "And there are lots of robots in this film."

Interacting with other cast members, Phil was both a challenge and a diversion. "He would bow his head and perform all sorts of antics with the cast," Anderson recalled. "It was intimidating at first for some of them. Who'd ever had to respond to a baby robot before?"

Considering the complex electro-mechanical nature of Phil's structure and design, his stint as a star went almost without a hitch. Dreiscszun, who was on hand to supervise any needed repairs, reported that the robot only occasionally blew a fuse or slipped a belt. Of course, there was the time a raccoon pulled Phil's head unit off, but for the most part, "Phil was the least trouble of any of the robots."

If there had been any major breakdowns, MPI had Phil's twin on hand. The exact duplicate model, however, was rarely called from its dressing room reserve.

Computers will take over the radio-control functions of Phil, now that shooting is completed. Installed as a featured exhibit at Universal Studio Tours, his antics will be dictated by a taped program, and he'll perform the same routine over and over and over again. (Unless he should escape

NOW, ONE MICROPHONE CAPTURES IT ALL.

The Sennheiser Tele mike Electret Microphone System.

Its unique modular design provides all the flexibility and precision of a collection of separates—from omni to super cardioid, spot to shotgun, telescopic boom to tie-clip lavalier.

All, at a fraction of the price of comparable separates.

And all, with the most advanced electret technology available: our unique back-electret.

See your Sennheiser dealer for details. And capture it all.

All components available separately or as a package.



SENNHEISER

ELECTRONIC CORPORATION
10 West 37th Street, New York, N.Y. 10018
(212) 239-0190

© 1981, Sennheiser Electronic Corporation (N.Y.)

at TECH CAMERA RENTALS

ARRIFLEX 35 III



Call our Rental Department

Sales • Rentals • Service

6370 Santa Monica Blvd. • Hollywood, CA 90038 • 213-466-3238

Nine ways PALMER FILM SERVICES can work for you: (CONTINUED)

4 We're Here to Help. Whether your need is for Laboratory, Recording, Editing, Titles, Animation, or Video Transfers, your job will receive careful, personalized attention at Palmer Films.

5 Advanced Color Developing: Our all-new color plant features the latest equipment and techniques for motion picture processing. We develop ECO, EF, MS, ECN II, Internegative, CRI, 7381 and Ektachrome 7389 and 90 with silver track.

6 Quality: Palmer Films has been providing top quality picture and sound reproduction for motion pictures since 1936. And if your film needs a little help, we do post flashing, force developing, scene-to-scene color correction, and liquid gate printing.

(TO BE CONTINUED)

to get the whole story, call:

W.A. PALMER FILMS, INC.

611 HOWARD STREET • SAN FRANCISCO, CA 94105 • PHONE (415) 986-5961

San Francisco's complete 16 mm film service

INVENTORY REDUCTION SALE

CAMERAS

35mm Arriflex, BL-1 w/set primes	
4 mags, pic, video assist	\$52,000.00
16 Arriflex, SR-2, 2 mags-400 ft,	
case, 2 batteries & charger,	
mint condition	\$2,900.00
16mm Arriflex BL w/12-120, 2 mags	\$7,500.00
16mm Arriflex S w/16, 25, 50	
primes, vari motor, cs	\$1,800.00
16mm Arri w/12-120, 2 mag, const.	
motor, cs	\$29,000
16mm Eclair NPR 2/12-120 crystal,	
mag cs	\$4,500.00
16mm Beaulieu, 12-120 Ang., Batt	\$1,200.00
16mm Bolex Rex 5	\$895.00
Arri image stabilizer	\$14,000.00

EDITING

Kem Universal 35mm 8 plate,	
2 pic, 2 sound	\$25,000.00
16mm Moviola, 1 pic, 2 snd (NEW)	\$4,500.00
16mm Moviola, 1 pic, 1 snd	\$2,150.00

PROJECTORS

Bell & Howell projectors	\$295.00
Viewlux 16 projector	\$500.00
16mm Bell & Howell "JAN"	\$495.00
Kodak 16mm Pangents	\$245.00
Kodak 35mm slide projectors	\$100.00 and up

LENSES

Canon macro zoom 25-120mm	
f-2.8 BNC mount,	\$7,500.00
25-250 Angenieux Arri B mount	\$4,100.00

ACCESSORIES

COMBO 16/35mm Arri Blimp	\$1,200.00
J-4 Zoom motor w/all bracketry	\$1,300.00
Eclair xtender	\$295.00
Arri S mat boxes	\$245.00
Bolex Custom Underwater housing	\$240.00
Various Mitchel motors & Mat boxes	on request
Mole Stands	\$75.00 and up
Uhre 4000L w/accessories	\$450.00
Used 8 & 12 Volt batteries	\$100.00
Changing Bags	\$15.00
26 & 35mm Reels and Cans	50% off
Complete 16mm dubbing stage	\$31,000.00

LIGHTING

2K soft lights	\$190.00
4K soft lights	\$295.00
2K McAllister	\$233.00
5K McAllister	\$471.00
2K Pan lights (New) McAllister	\$295.00
2K M/R	\$195.00
5K Mole Richardson	\$381.00

CALL OR WRITE FOR ADDITIONAL
INFORMATION AND CATALOGUES

SAWYER
CAMERA COMPANY



6820 Santa Monica Blvd.
Hollywood, California 90038
(213) 466-6111

one day into the lush Universal City hills.) So much for robots and free will. In the meantime, Milton Bradley has purchased rights to reproduce Phil in miniature as a toy, a new Teddy bear for the electronic generation.

"Children will identify with Phil on several levels," according to Blalack, who sees the robot as an evocative object in today's computerized world. "He's curious, he's vulnerable, and he makes many of the same blunders they do."

But perhaps even more importantly, "Children will be able to recognize the extent to which programming and ownership have already taken over in their world." As a metaphor for the late 20th Century, Phil offers a lively focus for dialogue on the nature of work, technology and human relationship.

Blalack, who also created effects for television's COSMOS series, as well as for ALTERED STATES, AIRPLANE, NINE TO FIVE, and most recently, the "alien vision" effects for WOLFEN and a special optical sequence for Paul Schrader's CAT PEOPLE, founded his own company, Praxis, in 1980. Praxis itself has made several technological advances, including the development of the first computer-based production management system, and the first refinement of blue screen composites, as utilized in STAR WARS. He is involved with machines and computers on a daily basis, and sees them as a mirror of the human construct, created as an extension, not a replacement, for humans.

The computerized (robotic) cameras at work in his Praxis facility, doing shooting procedures requiring high-precision movement and placement, are an example of automated production. "Humans aren't programmed to be good at that particular kind of job," Blalack says, reassuringly. "A machine can free us to be more creative."

While robotic research and development rests mainly in the realm of industry (which demands only that the devices have enough intelligence to handle their jobs), it may be up to filmmakers and effects designers to bring the concept of robot to the forefront of consciousness.

"A machine is a device, a thing," Blalack says. "Its role is to make life easier for its owners. What obligations do the 'owners' have to their machines? Does an examination of the relationship between human and machine reveal attitudes about the nature of human-to-human relationships in the area of work?"

These are some of the questions that make HEARTBEEPS and its robot star, Phil, so provocative—for all the children of the computer age.

BEHIND THE CAMERA ON "HEARTBEEPS"

Continued from Page 173

more golden over a wide expanse. Adding to that, Albert Whitlock put in a wonderful sun-setting matte over the top of the junkyard.

QUESTION: Did you use HMI lighting on this picture?

ROSHER: Yes I did, but I also used regular arcs. I used the HMIs quite a bit for bounce light and to pick things up in certain areas, but basically I went with arcs. If we were in a terrain where I could take the arcs, I would take them, because I could get more spread out of them. Actually, I prefer arcs because I like their quality of light better than that of the HMIs—but I like the HMIs, as well. They both serve their purpose. Sometimes, when we were working on top of a mountain where it was just not feasible to take arcs, I would use the HMIs instead. I used them for bounce light, as well as directional light.

QUESTION: Did you use much colored light?

ROSHER: I used a lot of MT2s and ½MTs for the night interiors, especially in the robot factory. For creating a moonlight effect, I would go to Half-Blues on 10Ks hung from the scaffolding. Shooting from the window, I would get an underexposed front light look by underexposing the faces about a half-stop to a stop. Then I would rim-light their hair with a ½MT filter on a light in back that was more or less up to key, a stronger light in relation to the front light that was about a stop under.

COMMENT: It would seem that because HEARTBEEPS is a kind of comic book subject, an unusual amount of colored light would be in order.

ROSHER: Yes, but there is so much color in the sets and costumes of this film to start with that we didn't have to add an enormous amount of color to anything, except for any license we wanted to take with moonlight or firelight. We had a sequence where they make love in a cave. Each robot has a Pleasure Center on the back of its clothes and it lights up and goes from yellow to red. We had to gobo all the light off their backs so that when we did our 360-degree shots and dollied all the way around them, our lights wouldn't wash out the pulsating effect of their Pleasure Centers. This posed problems

in light level, because we had to gear our whole lighting key to whatever lights were glowing in their Pleasure Centers... and get rid of any extra light that was falling on them.

QUESTION: Did you do any undercranking in the CrimeBuster chase sequences?

ROSHER: Yes, we dealt with a lot of variable camera speeds in the chase sequences—sometimes because of the terrain and also to make them appear to be going faster. When we first see CrimeBuster it is more or less on exhibit in the warehouse and it is being analyzed by two people who are checking it out for sale to the police department, or whatever. In that sequence we had to glamorize it, pulling back to a wide shot, just like in a very nice automotive commercial for television. But when CrimeBuster runs amok in the chase sequences, its comic strip time. We undercranked to make it go faster, but then we were worried that the red light on top would appear to be revolving too fast. They solved that problem by putting some sort of rheostat on it to compensate undercranking at 16 frames. Ordinarily the vehicle would travel at about 20 miles per hour, but in certain types of terrain, it just wouldn't go that

fast. If it had to travel 200 yards it would take forever. We wanted to take advantage of using the whole shot, but we didn't want to waste all that screen time, so we'd undercrank and bring the vehicle in faster. Using the 40mm or 50mm lens, we'd go to the fine line of 18 or 20 frames per second usually, but if we did a telephoto shot, we could run it at 16 frames and you'd never know it. We had to be careful that it didn't look like an obviously undercranked shot or like an old movie.

QUESTION: What about variations in the intensity of the red light when you were undercranking?

ROSHER: It didn't seem to matter much. I measured a difference of ⅓ of a stop to a stop, but this stock is so fantastic that you hardly notice any variation up to ⅔ of a stop on a red light like that.

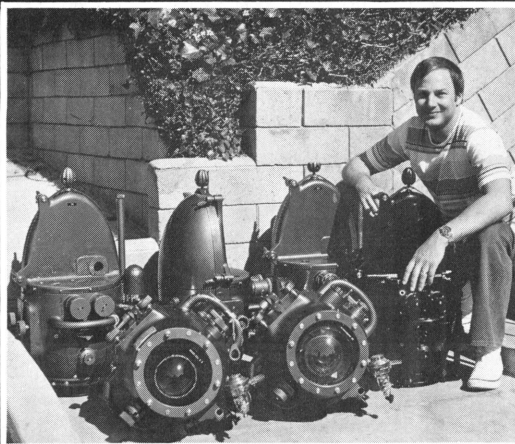
QUESTION: What would you say were your most challenging problems in photographing HEARTBEEPS?

ROSHER: Aside from having to balance human flesh tones to the metallic surfaces of the robots, I would say that the sequences in the woods were the most challenging and the most difficult to shoot. People somehow seem to think

**Big New Rental Place —
Same Old Solid Service.**

CLAIRMONT CAMERA

**4040 Vineland Ave., Studio City,
California 91604 • (213) 761-4440**



UNDERWATER

35mm Spherical and Anamorphic
Totalvision-Cinemascope-Panavision

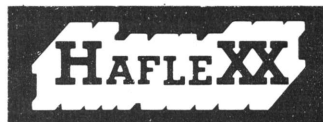
ALAN GORNICK, JR.
Director of Photography, IATSE 659

4200 Camino Real
Los Angeles, CA 90065
(213) 223-8914

Crystal Sync Headquarters

- **POM**—Crystal Speed Meter, All cameras, Nagra and HMI Lights.
- **CRYSDIAL**—Digital crystal control for Arri 35BL, Arri III, Arri SR and High Speed. Crystal accuracy at 2–99 Frames.
- **CRYSDIAL TV**—Above specs plus TV tube filming with no rollup.
- **UNIMOS**—Universal Crystal Sync Motor Control interchangeable Arri 16BL, S, M, IIC, Mitchell, NPR, etc.

Haflexx Corporation
Box 525 • Peterborough, N.H. 03458
Telephone (603) 924-7118 (24 hour)



that exteriors are easy to photograph, but I sometimes find them to be more challenging and very difficult, because everything is constantly changing. When you have to shoot a whole exterior sequence that supposedly takes place in a single day, the problem is always how to match from shot to shot, especially when you are into a dappled light area, where your background is ever-changing. Under these conditions it's a great challenge to maintain a consistency of style and find the right angles to hold the match, so that the cuts will all blend together. The other enormous challenge, as I mentioned before, was separating the black metallic *CrimeBuster* at night, because it would just disappear into limbo, except for the lights. Sometimes it became impossible to really outline it, especially in the woods at night, when you had to rely on the little gold reflectors and the reflective surfaces of the vehicle itself. The final problem was matching in the sunset sequences. You obviously couldn't start at 7 and finish at 8. You had to start at 5:30 or 6 and work until 8, because the light just begins to become good at that time. If you start 20 minutes earlier, it's very difficult to match—and you can warm up the print just so much in the lab. It just never looks the same. But fighting the sun constantly, and matching sunset lighting, and getting an enormous sequence shot in a very short time—as we had to do in *HEART-BEEPS*—is definitely a challenge... but it's also very fulfilling. ■

INDUSTRY ACTIVITIES Continued from Page 162

compensation and distribution is offered to those filmmakers whose work is selected.

Each program is reviewed by the *Los Angeles Times* and other major press. Publicity is arranged for every film shown.

Filmmakers wishing to submit 16mm films, under one hour in length, should send them to NU MOOVEEZ, 6515 Sunset Blvd., Suite 204, Hollywood, Calif. 90028, or call (213) 467-7382. When mailing films, a check or money order to cover return postage should be included.

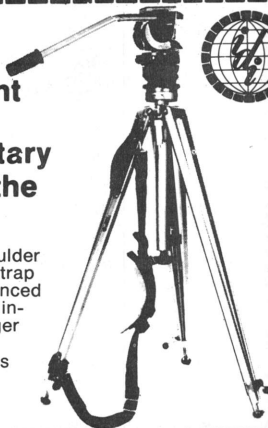
MASON GROSS FILM FESTIVAL DEADLINE FEB. 15

The Mason Gross School of Art at Rutgers University announces its Second Annual Mason Gross Film Festival to be held APRIL 5–7, 1982. The Festival is open to all 16mm and super-8 films which reflect the use of film as a creative medium, regardless of any particular style or form.

Each film submitted will be seen by a

The
fastest
lightweight
news/
documentary
tripod in the
world

Over the shoulder
leather carry strap
installed • Balanced
carry handle in-
stalled • Hanger
hooks installed
• Velcro tie-ups
installed
• Extra D-ring
installed



SUPERSTIX

New Prices — SuperStix and Accessories

SuperStix legs only	\$ 680.
SuperStix with Miller Pro 106 Head	1,442.
SuperStix with O'Connor 30 Head	1,555.

IMAGE DEVICES INTERNATIONAL

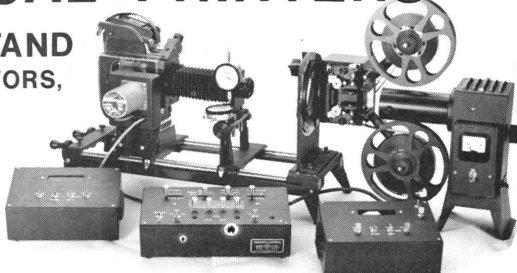
MIAMI
1825 N.E. 149 Street
Miami, Fla USA 33181
PHONE 305 / 945-1111
TWX 810-845-4242
Telex 51-9348

ATLANTA
1651 Phoenix Blvd.
Atlanta, Ga USA 30349
PHONE 404 / 996-0000
TWX 810-7666-1060

OPTICAL PRINTERS

ANIMATION STAND
STOP MOTION MOTORS,
COMPOUND TABLE
REMOTE CONTROLS
QUARTZ LIGHT SOURCE,

**WE STILL MAKE
THEM FOR LESS**



FOR FURTHER INFORMATION
DIRECT YOUR INQUIRIES TO:

J-K CAMERA ENGINEERING, INC.

5101 SAN LEANDRO ST., OAKLAND, CA. 94601 • (415) 534-9018



Screening Committee which in turn will select and program the films for the public screenings.

An Awards Jury comprised of both filmmakers and film critics will choose "Best of Festival" films to receive substantial cash prizes.

The deadline date to submit films is FEB. 15, 1982. For information and application forms please contact: Mark Berger/Earl Ripling, Mason Gross School of the Arts, Walters Hall, Douglass College Campus, Rutgers University, New Brunswick, N.J. 08903.

AMATEUR FILM FESTIVAL ANNOUNCES OPEN COMPETITION

The Motion Picture Division of the Photographic Society of America announces the 1982 PSA-MPD American International Film Festival. This will be the 53rd annual festival conducted by PSA-MPD, the oldest amateur film festival in the world.

The festival is open to all competition in the following categories:

Class A—film made with no commercial or financial object in mind, and films which have not been subject to any sale or rental agreement prior to entering the contest.

Class B—student films made by students enrolled in a school or Department of Cinematography.

Class C—Commercial films covers all entries that do not qualify in Class A or Class B.

All entries must be received by the Festival Chairman on or before May 15, 1982. Films will be judged at private screenings by two sets of judges, and winning films will be shown publicly at the Societies' International Convention in New Orleans in August, 1982. Films will be returned after the Convention. Trophies, plaques, and certificates will be awarded the ten best and the honorable mention entries. Entries are limited to 30 minutes and may be in either regular 8mm, Super 8mm, or 16mm. 35mm or video are not accepted at this time.

Entry fees for PSA members is \$5 per film and non members is \$7 (USA). It is not necessary to be a PSA-MPD member to enter.

For further information contact: Jim Meeker, Chairman, American International Film Festival, 1329 Hilltop Drive, Milan, IL 61264 USA.

MOVING?

When changing your address, please notify us at least four weeks in advance. BE SURE to give your FORMER address as well as your NEW ADDRESS and ZIP CODE.

AMERICAN CINEMATOGRAPHER

CUSTOM BUILT CAMERA CARS

FILM & VIDEO

STATE OF THE ART ENGINEERING FOR YOUR PRODUCTION OR RENTAL NEEDS

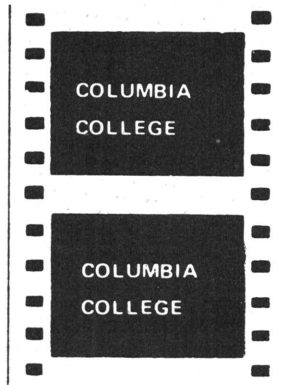
Select From:

Camera Boom . . . AC/DC Light Power . . . Battery Packs
Intercom . . . Air Suspension . . . Multi-Tow Stations
Full Camera Platforms and Mounts

Designed and built by Hollywood's most experienced
DRIVER-BUILDER: RAY TOSTADO CAMERA CARS

(213) 823-1843

915 W. Kensington Rd., Los Angeles, CA 90026



Approved for Veterans

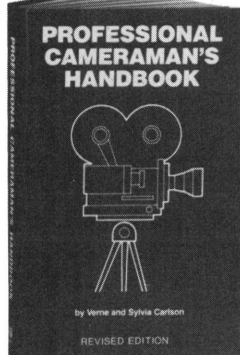
A study of the Motion Picture and Television Arts and Sciences within a degree program, taught by a distinguished faculty.

Now Registering. Write for a descriptive brochure.

COLUMBIA COLLEGE

925 No. La Brea Ave.
Hollywood, Calif. 90038
851-0550

REVISED AND EXPANDED



GREEN BOOK NOW RED

Professional Cameraman's Handbook

BY VERNE AND SYLVIA CARLSON

NEW FEATURES: • Eleven all new production cameras and accessories
• Now includes all Panavision models

"As a famed Hollywood director has said, 'With the Carlson Handbook in his ditty bag, I would be willing to hire a total stranger as my Assistant Cameraperson.'"

— Frank Valert

Everything the cameraman needs to know about operating a motion-picture camera is in this book: from an explanation of the cameraman's duties and responsibilities, to loading room procedures, to an exhaustive description of every major camera model in current use. 516 pp. 200 B&W illus. #455485. \$21.95

Order your copy directly from your local bookstore or
Amphoto, 1515 Broadway, New York, NY 10036
AN IMPRINT OF WATSON-GUPTILL PUBLICATIONS

American Cinematographer



Please enter my new subscription for 1 year —
\$20 U.S. \$25 Canada & Mexico \$30 Foreign
and send me a
free copy of the
Four-In-One Reprint.
I am enclosing
my remittance.

(offer available only
with remittance)

American Cinematographer
P.O. Box 2230
Hollywood, CA 90028

Name _____

Address _____

City _____ State _____

Zip _____

OSCAR HIRT INC.

RELOCATION & MODERNIZATION SALE

Arri 16/BL w/12 x 120 lens gov mot—2 mags—batt	\$5000
Arri 16/BL-12 x 120-APEC Univ mot—2 mags—Batt	\$6000
Arri 16/BL-12 x 120-APEC CP XTAL—2 mags—Batt	\$6500
Arri 16 M/B—vari mot 2 mags—batt—case	\$3500
Arri 35 IIC/B/GS 2 mot—Flat base—2 mags 18, 35, 50 & 75mm lenses . . .	\$7500
CP GSMO w/Orientable V/F 2 mags—2 batts—case	\$7000
Eclair NPR—orientable V/F Perfectone Xtal mot—2 mags	\$7000
General Camera SS-3 with mag—batt	\$1000
B & H 70 HR Hi speed 128 fps AC mot—400' mag . .	\$ 600
B & H 70 DR—body only	\$ 250
AC sync mot for ARRI 16 BL . .	\$ 200
24 fps Gov mot for Arri S/M . .	\$ 200
Perfectone CIBLO mot for NPR	\$ 250
Haflex Unimos Crystal cable for Arri 16 BL	\$ 400
Beaulieu 4008 ZM4 (super 8) 6 x 70mm lens—batt—Chg . .	\$ 500
8mm Zeiss lens f2	\$ 850
Kilfit Telecombination lens 400mm-600mm elements- doubler Arri & Nikon mts & cradle	\$1200
Vega 54/58 wireless mic system hand held trans—Diversity Recv	\$1200

VIDEO

Sony Beta I SL260 recorder . . .	\$ 600
Panasonic 8400 VHS port Recorder	\$ 495
Sharp XC 320U 3 gun vidicon Cam w/lens—batt—chg— AC unit	\$1800
Kalart Telebeam I Video Projector B/W—9' x 12' Image	\$1000
Steadicam Univ I with: film & TK-76 progrms extra batt—quick chgr Cinevid—hard shipping cases	\$20,000

OSCAR H. HIRT, INC.
922 Callowhill St., Phila., PA

215-629-8562

TALKING TECHNICALLY

Continued from Page 140

must travel together. A single item may be returned prior to the remainder, provided that the Carnet travels with it, the item is deleted and the Carnet returned to travel with the remainder of the equipment. Film stock, to be returned for processing should not be on the Carnet.

At least two copies of the list must be provided for each border to be crossed. The Chamber of Commerce will then supply the document with sufficient pages to deposit one copy each time a person who is travelling with the equipment will be required to sign the Carnet and the relevant documents at every customs post. Blue Carnet vouchers are used when the equipment is in transit only, white when it is to be used.

Before travelling the person responsible for the Carnet should verify that there are no inaccuracies or deficiencies in shipping lists, that he knows where to find serial numbers of the various items of equipment and that every digit of every number is correct. All the sheets of the Carnet are numbered from one onwards and the correct pair must be used for each country visited. When leaving the country where the Carnet was raised, the local customs officer stamps the first page to confirm that the goods have, in fact, been exported. Upon arrival at the first port of call the customs officer there stamps the next page as evidence that the equipment has been imported, and so on until it is re-imported into the original country and the Carnet document is returned to the local Chamber of Commerce.

The person responsible for the Carnet must allow plenty of time at each border, insist that a customs inspection be carried out and the form stamped and never be put off by a wave of the hand throughout the journey.

Should the Carnet not be properly stamped at each and every customs control it has passed through, the chances are that the bond will be forfeited, which is money down the drain. The motto is that there is no rush so great anywhere that there is no time to get the Carnet stamped and that it must be stamped, come what may, even if it means sleeping in the car at a remote customs post which may only be open during normal office hours.

Another aspect of moving gear from one place to another (and not taught in film schools) is how to raise it up and down on the end of a rope. It sounds easy, but anyone who has stood under a camera case weighing 100 pounds as it is lowered from the top of a tall scaffold tower will know that much hangs on the way a camera

case is attached to a rope and how the rope is handled.

In this respect we can take lessons from mountaineers who really do know their ropes and are always hauling things up and down on them, including themselves. They often use a kidney shaped ring called a Karibena and a handful of these would find a useful place in any assistant's or grip's diddy box.

When I was one of the team shooting WHITE ROCK, the film of the 1976 Winter Olympics Games at Innsbruck, our skiing cameraman, Herbert Raditschnig, who is also a mountain guide, demonstrated his knowledge of rope tricks. His final show of expertise was to lower his gear from a stationary ski lift to his camera position on a very steep slope below and finally to lower himself down by rope. Not too many talented cameramen could do that.

I noted he was credited with some of the second unit cinematography of FOR YOUR EYES ONLY and you can be sure that wherever Herbie went, most others would fear to go. ■

(Illustrations from David Samuelson's Book, "Motion Picture Techniques," published by Focal Press.)



Zeppelin[®] wind screen

Z416 — \$115.00
Z816 — \$130.00
AR416 — \$75.00
AR816 — \$75.00
High-Wind Sock for any size — \$17.95

The Zeppelin Wind Screen Insures rumble-free sound recording under windy conditions. Your video recorded sound will be virtually studio-clean despite noisy air movement. The Zeppelin aerodynamic design screens the microphone, filtering the wind, allowing the sound in. Although extremely lightweight, the Zeppelin is nearly indestructible and can be boom mounted or hand held with the Anti-Rumble Shock Mount. There are Zeppelins available to house Sennheiser 816, 416 and K3U; AKG CK-8 and CK-9; Schoeps and other similar microphones.

alan gordon enterprises inc.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

MOVIOLA 16mm Portable Six Plate Editor



**SALES AND SERVICE
from the only one
in New York**

- Bright, stable, sharp picture.
- Manual inching, in synch lock or separate.
- Independent torque motor controls.
- Rugged, lightweight, tilting top.
- Counter: built in LED display shows feet & frames, minutes & seconds.

**CALL (212)889-3300
LAUMIC CO. INC.**
306 EAST 39th ST., NEW YORK, N.Y. 10016

American Cinematographer

**ISSUES WHICH GROW RARER
with each passing year . . .**

We have limited numbers of

- "Star Trek," February 1980
- "Empire Strikes Back," June 1980
- "Alien," August, 1979
- "Shining," August, 1980
- "Shogun," September, 1980
- 3-D Special, April, 1974
- "Clash of the Titans," June 1981
- "Lone Ranger," July 1981
- "Raiders of the Lost Ark," November 1981

Other issues back through the years are also available.



Send \$5 per issue to:

AMERICAN CINEMATOGRAHER
P.O. Box 2230, Hollywood, CA 90028

"HEARTBEEPS"... AND HOW IT WAS FILMED

Continued from Page 171

them, broke down anyway.

The steely old uncle robot, CatSkil, older than the others, had a hard time negotiating the hills while keeping his cigar smoking, his eyebrows raising and his pinky ring lit. Comedian Barry Diamond, who sat inside the cramped quarters of this robot to give him comedic timing announced at one point that he had hot oil dripping on his face.

And once at the junkyard, when Phil, the child-unit, was busily discovering what a raccoon is, the robot looked down at the furry creature and bent forward—and his head fell off. Special effects men promptly fixed him with parts from the junkyard.

CrimeBuster, the malfunctioning police unit, was more delicate than he looks. One of his machine guns was usually out of commission, or his flamethrower wasn't ready. Or his power chain broke. Or his turret wouldn't turn or his carburetor blew.

Makeup designer Stan Winston was assisted by 20 people throughout the film. A gelatinous material of ground-up calves' hooves was made into masks, which were cut into pieces and fitted to Peters' and Kaufman's faces. New appliances were made each day, after receiving eight coats of metallic robot paint.

In spite of everything, however, the movie was actually completed. ■

THE NEED FOR SHOOTING FLEXIBILITY Continued from Page 143

In 16mm you want the flexibility of a zoom lens—without sacrificing the quality of a prime lens, of course—so because of my work with the 35mm Varotals, I was eager to test the 9mm–50mm Varotal for 16mm to see if it held up as well as the 35mm's did to a comparable focal length in prime lens. I wanted to test 9mm–50mm Varo-Kinetal T/2.5 for contrast, resolution and flare factor against the 16mm Cooke Kinetal prime lens as the ultimate test.

Not to my surprise, the results were that the 9mm–50mm lens tracked excellently and it achieved 100 line pairs per mm on axis and to the picture corners. And it was unusual in that it held throughout the zoom range. It also permitted shooting as close as 230mm from the front lens and 450mm from the film plane. So the lens acts as a closeup or macro lens, which is an advantage over most prime lenses. The lens is also high-efficiency coated or multi-coated, which reduced the flare factor, so important for good contrast and contributing to the sharpness of the image. This point I think is greatly overlooked in 16mm

NEW 6K HMI SOLAR-ARC



Mole-Richardson Co.



Rental
and Sales

Lighting From Hollywood

24-Hour Phone

851-0111

937 N. Sycamore Ave.
Hollywood, CA. 90038

swintek

The Leading Name In
Cordless Microphone Systems



Transmitters small enough to be hidden almost anywhere, tiny microphones that are so unobtrusive that they probably won't even be noticed, hand-held microphones without the encumbrances of hundreds of feet of wire—that's what cordless microphone systems are all about. But there's one more factor of prime importance—reliability. If you're in television, radio or film and you want a cordless microphone system that not only offers the most advanced state-of-the-art electronics but the highest reliability rating in the industry, Swintek is the answer. There's a Swintek transmitter and receiver to fit your specific needs, no matter what your requirements. Check with us today about the greatest name in cordless microphone systems—Swintek.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

WATER-PAK WEIGHTS



Water-Paks are ideal weights for a variety of cinematographic uses. They are easy to transport and store and weigh only one pound empty. Filled with water they weigh 14 lbs., with sand, 16 lbs., and are most adaptable for weighing down light stands, "C" stands, triangles, etc.

Two configurations are available: the standard Water-Pak I — Saddle Bag model, and the Water-Pak II — "Banana" model.

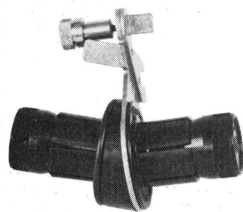
Either model only **\$23.95**

DEALER INQUIRIES INVITED.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

A two roll tape holder for Italian-made splicers.



Sound and picture unite in Ciro's new tape holder. It takes one roll of optically clear tape and one roll of magnetic splicing tape. With equal amounts of tape on either side of the cut for a stronger splice.

It's more than a spare part...
it's a necessity.

Available now at your theatre equipment dealer, or write to:

CIRO

EQUIPMENT CORPORATION

6820 Romaine St., Dept. A C
Hollywood, CA 90038
(213) 467-1296

TWX: 910-321-4220 JR FILM

shooting. One can't always be as careful about flare in and near the lens when you're on a documentary, for example, when you have to adapt to where your subject is and you can't control the light as in a more controlled type of filming.

In a short focal length zoom lens you also expect speed from the lens. I know that the lens would be compared to the excellence of the 9.5mm-57mm Angenieux zoom rated at T1.9. However, the 9.5-57mm Angenieux is only at T11.9 from 9mm to 14mm; then the sliding exposure shifts to T12.5 by 42mm, which I've never been in favor of. I also ran tests, and found that the 9mm-50mm Cooke Varotal held up well against the Angenieux throughout the range. I could not perceive a difference in an exposure test shot off a face next to an 18% gray card.

Possibly the Cooke Varo-Kinetal is rated conservatively compared to the Angenieux.

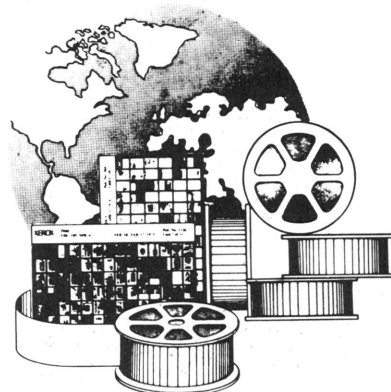
Field Testing

The real test is always in the field application. My first use of the lens was when it was a prototype, on a project for Werner Herzog (LA SOUFRIERE) on the Island of Guadalupe where a group of people resisted leaving the island in the face of a volcanic eruption and total destruction of their homes and island. Not knowing what I had to face on an island in the process of being deserted, I expected to rely only on available light. But I did know that Herzog would want the film for theatrical distribution, if we made it back, and as a result optically I wanted the highest quality lens. So, I brought two zooms (a 12mm-120mm Angenieux and a Cooke Varo-Kinetal 9mm-50mm), though I was concerned that the range of the Varo-Kinetal would limit my use of it. But in reality I used the lens for 80% of the shooting, with results that have gone into theatrical release.

In my recent work on Jean Luc Godard's PASSION—A SCRIPT, we used 35mm, 16mm, Super-8mm and videotape, which gave me a good basis for comparing their strengths and weaknesses. Each format was used for aesthetic reasons and the final results will be transferred to 1-inch tape and/or 35mm. But when comparing 16mm shot with the Varo-Kinetal against the other formats, it held up well in comparison to the 35mm in image quality.

If you agree with my point that photography is a process of deterioration, the importance of using the highest quality lens and equipment cannot be overlooked to achieve the end results you're looking for.

This Publication....



is Available in MICROFORM

For Complete Information

WRITE :

**University
Microfilms
International**

Dept. F.A.
300 North Zeeb Road
Ann Arbor, MI 48106
U.S.A.

Dept. F.A.
18 Bedford Row
London, WC1R 4EJ
England

MOVING?

PLEASE NOTIFY US
6 WEEKS IN ADVANCE

Miss/Mrs./Mr.

Name (please print)

New Address

Apt. No.

City

State

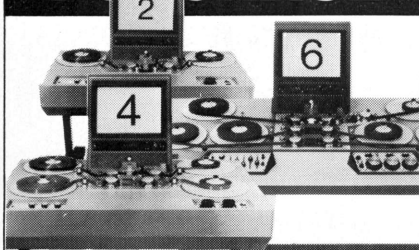
Zip

**MAIL TO
AMERICAN
CINEMATOGRAPHER**

P.O. Box 2230
Hollywood, Ca.
90028

ATTACH LABEL HERE for address change or inquiry. If you are receiving duplicate copies of AMERICAN CINEMATOGRAPHER, please send both labels. If moving, list new address above.

RENT-LEASE PURCHASE



the 35mm
or 16mm Moviola
Console Editors from the
only one in New York

- Service contracts available on all moviola equipment.
- Complete line of editing, projection and sound equipment for rental or purchase with full shop facility for overhauls and service.
- Complete stock of editing supplies.

CALL (212) 889-3300

LAUMIC CO. INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016
SALES • SERVICE • RENTALS



**High blood
pressure.
Treat it
and live.**

WHAT'S NEW

Continued from Page 112

The CP Co-Ax Control system is ideal for all extended shooting situations such as sports events, political rallies, live concerts, etc.

The CP Co-Ax Control system is available for Sony BVP-300/BVP-330 and Thomson MC-601/MC-701 cameras; RCA TK-76B/TK-76C cameras; NEC MNC-71 series cameras; and Ikegami HL-77 series and HL-79A ENG/EPF cameras. Prices for all PAL-B versions of the CP Co-Ax Control system start at \$8500.

For further information, please contact Cinema Products Corporation, 2037 Granville Avenue, Los Angeles, California 90025. Tel: (213) 478-0711 and (213) 477-1971.

SPECIAL LENS ACCESSORY FITTING SERVICE TO BE OFFERED BY SPIRATONE

A special fitting service, which makes it possible for owners of lenses which do not have standard threads, to equip these with virtually any filter or other front lens accessory, has been introduced by Spiratone, Inc., America's largest specialist supplier of photographic accessories.

In recent years, camera and lens manufacturers have standardized on a few sizes, namely, 49, 52, 55, 58, 62, 67, 72 and 77mm screw-in diameters, for virtually all of their lenses. As a result, there is available a large selection of accessories in these sizes—and virtually none for the many fine lenses still in use and which may not be threaded for accessories at all or which are equipped with other diameter threads.

It is for these lenses for which Spiratone offers, by means of slip-on, set-screw, screw-in or bayonet fittings, coupled, when necessary, with step-up and step-down rings, a full range of filters and special effect accessories. When two or more lenses are to be equipped with accessories, Spiratone will recommend the best means of utilizing the same accessories on several lenses.

To enable the photographer to supply Spiratone with all needed data on his lens(es), a special form, with detailed information on the Fitting Service, can be obtained. This form, together with a copy of the complete Spiratone catalog, is available for fifty cents (foreign countries, including air mail, \$3), by writing Special Fitting Service, Spiratone, Inc., Spiratone Building, 135-06 Northern Blvd., Flushington, NY 11354.



T-Shirts for Filmmakers

Twenty-one popular professional film equipment designs. Write for free brochure.

alan gordon enterprises inc.

Dept. TS

1430 N. Cahuenga Blvd. Hollywood, CA 90028

Telephone: (213) 466-3561 • (213) 985-5500

CP and FREZZOLINI CORDLESS CAMERAS

COMPLETE OUTFITS
used, reconditioned **\$2995** up
Includes Ang. 12/120 Zoom lens,
magnetic recording head, amplifier,
400' magazine, battery.

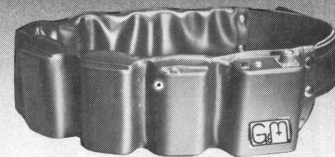
PHOTOMART

CINE EQUIPMENT SUPPLIERS

6327 S. ORANGE AVE. • ORLANDO, FLA. 32809

Phone (305) 851-2780

Another G&M First THE BATTERY BELT THAT MAKES ALL OTHERS OBSOLETE!



THE NEW G&M NICAD 1C SERIES

- Will Fully Charge in 1 1/4 Hr.
- Charger Automatically Cuts Off
- L.E.D. Charge Mode Indicators
- All Solid State Electronics
- Time and Temperature Cell Protection
- Available in 12V and 30V Belts
- Eliminates the Need for a Separate Fast Charger

*The Most Sophisticated
Battery Belt Ever!*

Special Introductory Offer

**GM12B-1C, 1 1/4 Hour Charge
Battery Belt \$675.00**
**GM30B-1C, 1 1/4 Hour Charge
Battery Belt (Illustrated) \$825.00**

G & M POWER PRODUCTS

6500 Santa Monica Blvd. / Los Angeles, CA. 90038

(213) 465-8236

UNDERWATER/WILDLIFE FILM / VIDEO



WORLD WIDE EXPERIENCE—
13 SEASONS OF WILD KINGDOM
THE BEST IN EQUIPMENT —
WE BUILD OUR OWN!

RALPH J. NELSON II
312/ 381-4824

NL

IF IT'S EKTACHROME WE DO IT

SEND FOR NEW PRICE LIST & BROCHURE

NEWSFILM LABORATORY, INC.

516 N. Larchmont Blvd.
Hollywood, California 90004
(213) 462-6814



JIM CURRY

SERVICE ON MOVIOLA FLATBEDS

COVERING SOUTHERN CALIFORNIA
PHOENIX, LAS VEGAS, SAN DIEGO

213/762-3592

P.C. Board and Electronic Assembly Repair

PETER M. GILBERT, CINEMATOGRAPHY

DOCUMENTARY • INDUSTRIAL • FEATURES

Personal Equipment Includes:

Aaton 35 mm Camera
Aaton 7 LTR 16 mm Camera
Arriflex 16S Camera

Lowel 'D' Kit
Lowel 'Soft Lights'
Mini-Cools

Packages starting from \$200 per day...

(BUS.) 312-799-9210

CHICAGO, USA

(HOME) 312-798-2496

NOTE TO CLASSIFIED CUSTOMERS

Rates for classified ads will increase effective with the February 1982 issue. Please send payment with ad at 60 cents per word for light face; 80 cents per word for bold face or caps. Include \$3 extra for blind ads.

THE PHOTOGRAPHY OF "LITTLE LORD FAUNTLEROY"

Continued from Page 175

deal in getting them up there and we had a reasonably tight schedule. So I went in for the HMI's, which did the job very well. I was amazed, because basically it was the first time I had used the bigger ones, the 4K's, and once I had got over the problem of balancing them, (I never seemed to get two of these lamps the same colour temperature), they were left in position and covered up at night and ignored and walked away from them until we needed them again. Outside when we were doing the exteriors, especially if it was a hard sunny day, I'd stick on a low contrast filter also, of course, with the gauze still on to soften it. So we kept a steady continuity on the look of the picture.

QUESTION: Were you using the zoom or prime lenses?

IBBETSON: No, I would say that 95% of the film was shot on the Cooke Varatol 5:1 lens. Two reasons, I suppose. One, years ago when we always used primary lenses it used to drive me mad to go and sit in the daily theatre and see shot after shot coming up with different colours, because this lens had a green bias and this one had red and so on and so on, so I have been a great believer in sticking to the zoom lens, but because we can do, I suppose, practically everything on the zoom lens that we could do with the straightforward lenses. And by so doing, we eliminated all these different colour biases that we had in the old days. And of course, there is the time factor. We don't have to fiddle about changing lenses, taking it off and putting it back and let's try it with this, without getting viewfinders out. That's why we went with the zoom lens. I shall always try and stick with the zooms. I know what I'm going to get then.

QUESTION: To what extent do you as the Director of Photography concern yourself with the make-up artist?

IBBETSON: Well, this is an area that I like to get involved in and the make-up artist we had on this film was a man I had worked with on numerous occasions and who had worked on practically every film Alec Guinness had ever done. We have a very good understanding. He knows exactly my feelings towards make-up and we go along with the intention of making a film without anybody, even the artist, being aware that they have been made-up. I suppose, basically, I'm saying that we go with as little make-up as possible. It works.

BLOW-UP

HIGH QUALITY
35MM NEGATIVES
FROM YOUR 16MM ORIGINALS

Stock Shots Enlarged to Match-in with
your 35mm Negative
Complete Pictures Transferred to 35mm

Call—Adrian at (213) 463-3178

CINESERVICE, INC.

1459 North Seward Street
Hollywood, California 90028

ECLAIR

Repairs and Service NPR — ACL

All Work Guaranteed

Ecam Company

1430 N. Cahuenga Blvd.
Hollywood, CA 90028

Telephone: (213) 466-7301



HOLLYWOOD'S OLDEST
FILM SCHOOL

NOW ACCEPTING ENROLLMENTS
FOR OUR NEXT

MOTION PICTURE COURSE

CAMERAS • SOUND RECORDING
LIGHTING • EDITING • EFFECTS
COMPOSITION • SCRIPTING • ETC.

Two Week Courses— Evening Classes

DANNY ROUZER STUDIO

7022 Melrose Avenue, Hollywood, California 90038
Request Brochure HC (213) 936-2494

UNDERWATER PHOTOGRAPHY AL GIDDINGS

- Production
- Directing
- Filming
- Stunts/Doubles
- Props/Post Prod.
- 1980 Emmy for Cinematography
- James Bond 1981 For Your Eyes Only
- The Deep

Panavision - 35mm - 16mm Equipment

Exciting/beautiful undersea footage and stills for sale.

Over 300,000 feet and 30,000 transparencies of whales, sharks, dolphins, wrecks, coral reefs, kelp, much more.

OCEAN FILMS, LTD.

6853 Buckingham Blvd.
Berkeley, California 94705
(415) 548-2110



Filmmakers Cap

A handsome, quality cap in gold and navy blue, embroidered with the Tiffen name in gold lettering.

One size fits all. Send \$5.25 by check or money order (no cash). Outside USA add \$1.50 for postage and handling.

TIFFEN®

Dept. AC 90 Oser Ave., Hauppauge, N.Y. 11788
(516) 273-2500 Telex 96-7748

A DYNAMIC NEW LOOK IN

UNDERWATER CINEMATOGRAPHY

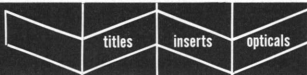


LOUIS PREZELIN

"8 YEARS AROUND THE WORLD WITH THE COUSTEAU TEAM"

390 RAVENSCROFT GOLETA CA 93117
(805) 967-6349

WESTHEIMER Company



Joseph Westheimer, A.S.C.

TITLES, TRAILERS, INSERTS AND OPTICAL EFFECTS
FOR MOTION PICTURES AND TELEVISION
466-8271

736 Seward St., Hollywood, Calif. 90038

2 Audio / 1 Sync.



6.6 pounds 9.25 x 2.3 x 7.25"
Conversions by THE FILM GROUP
Lines Available:

SENNHEISER	ELMO
AKG	EUMIG
SONY	MILLER
UHER	NIZO
JVC	SANKYO
LOWEL-LIGHT	SPECTRA
BOLEX	GOKO
BEAULIEU	ORYTEC

JAC

ARPENTER (CINE)
P.O. BOX 1321
MEADVILLE, PA 16335-0821

QUESTION: As a very experienced operator yourself, in the past what is your attitude toward your operator on a picture like this?

IBBETSON: Well I have tremendous confidence in the operators that I have working with me. I suppose I can really count the operators that I have had on one hand. They know exactly how I play the field, inasmuch as years ago when I was an operator, I was working with an American director over here, a very renowned American director by the name of Lewis Milestone. Lewis, or Milly as we referred to him, would always talk to me about the set-up, what he wanted and how he wanted the movement, etc., and up to this particular film, directors had always conversed with the lighting cameraman about what the set-up should be and whether they wanted a track or cuts, etc., whichever way they wanted to play it. But on this film, Milly would always talk to me, the operator, as a result of which I always felt slightly embarrassed. It seemed to me as if he was, not ignoring the lighting cameraman, Ted Scaife, but he was bypassing him to some extent. As I said, this was something quite new to me and I felt strange about it. So much so that I spoke to Milly and asked would he mind somehow including Ted in the discussion of the set-ups, to which he replied by calling Ted over and said that he didn't want Ted to feel in any way left out of things, but he said he didn't see any point in telling Ted what he wanted when he, Ted, would have to turn around and tell Arthur what Milly wanted. "Somewhere along the line something gets lost." So he said, "Don't feel upset if I deal directly with Arthur because this way, at least, it's just a one-way stream. It goes from me to Arthur and that's it." Ted was delighted. He said he wasn't worried on that score and was delighted to have been put in the picture. He said that, as a matter of fact, it gave him a little more time, because he could overhear what was going on which gave him a bit more time to anticipate what the lighting requirements would be on the next shot. So ever since then—and when I became a lighting cameraman—I have carried on that system. In other words, I let the operator now move along with the director. But I'm very much in the vicinity, over eavesdropping, and knowing exactly what it's going to be so that I can always be a jump ahead. If I hear the word "track" I know I have got to keep clear of that area for about 10 minutes, because there are going to be some tracking boards put down. I think this is a good system. I don't know whether this happens too much in America. On the occa-

SUPER BALTAR LENSES

We have the only remaining inventory of BRAND NEW Super Baltars, from 20mm to 152mm in the world today! Write us or call for prices.

1994 N.E. 149th St.
No. Miami, Fl. 33181
(305) 949-9084, 9085

NCEO

OXBERRY

Division of Richmark Camera Service, Inc.

Tel. (201) 935-3000

Cable: Oxberry Carlstadt N.J.

180 BROAD ST., CARLSTADT, N.J. 07072

OPTICAL PRINTERS LIQUID GATE

ANIMATION & FILMSTRIP EQUIPMENT



FILM/VIDEO SERVICES

CANADA

Since 1963

Complete Producer's Services
Crews, Equipment, Post-Production

GRATTAN PRODUCTIONS INC.

4508 St. Catherine St. W.

Montreal, P.Q. H3Z 1S3/Canada

(514) 932-1463



Best Sellers

Film • Television • Video

AMERICAN CINEMATOGRAPHER MANUAL

(C).....\$25.00

MOTION PICTURE CAMERA DATA

(P).....9.95

PROFESSIONAL 16/35 HANDBOOK

(C).....21.95

5C'S OF CINEMATOGRAPHY (C).....20.00

USE OF MICROPHONES (P).....9.95

T.V. LIGHTING METHODS (P).....9.95

TECHNIQUE OF FILM ANIMATION

(C).....26.95

VIDEOTAPE RECORDING 2nd. ed.

(C).....27.95

TECHNIQUE OF THE SOUND STUDIO

4th. ed. (C).....27.50

Add \$1.50 handling and postage. Calif.

res. add 6%. Write for free list. **BIRNS &**

SAWYER INC., 1026 N. Highland Ave., Los

Angeles, Ca. 90038 • (213) 466-8211.

Telex 673280.

SUPERCINE

A Professional Super-8mm Laboratory

- ✓ Color duplicates
- ✓ A&B roll printing
- ✓ Fades and dissolves
- ✓ Scene-to-scene density correction
- ✓ Workprints with edgecoding
- ✓ Pre-stripped prints
- ✓ Internegatives/release prints
- ✓ Magnetic striping
- ✓ Sound transfers/stereo/2-track
- ✓ Reduction printing — 16mm to S-8mm
- ✓ Blow-ups — S-8mm to 16mm
- ✓ Blow-ups — Reg. 8 to S-8mm
- ✓ S-8mm/Reg. 8mm to video transfers
- ✓ Cartridging

Send for our new price list

SuperCine Inc.

2218 West Olive Avenue

Burbank, California 91506

(213) 843-8260

BOLEX ACCESSORIES

- 24-Frame Sync. Camera motor 115 V
- Var. Speed Battery Camera motor 24V
- 400-ft. Magazine w/400' counter in camera
- Interval timer—Range 1 1/2 sec. to 36 min.
- Animation motor. Fits single-frame shaft

Write for Bolex Accessory Catalog

STEVENS ENGINEERING CO.

402 KING'S RD.

NEWPORT BEACH, CA 92663

Freelance cameraman and filmmaker
Certified STEADICAM® operator
Production and projection services
Proudly a member of IATSE 659 & 159



L. J. ROBERTS

P.O. Box 242
Portland, OR 97207



ANIMATION

LEARNING KITS, SUPPLIES, EQUIP.

New No. 107 Color Catalog \$2.00

heath productions, inc.
1700 N. Westshore Blvd., Tampa, FL 33607

HiQUALITY OPTICALS

ALL FORMATS: 35, 16, 8, Slides
TITLES, EFFECTS, BLUE SCREEN

PRICE • QUALITY • SERVICE

(415) 495-4428

860 Second St. San Francisco, Ca. 94107

WE BUY

Film Stock Video Cassettes

TOP CASH

PLUS 50% OF SHIPPING

RAFIK (212) 475-7884
814 BROADWAY, NEW YORK, N.Y. 10003

KB FLUID HEAD

For Video and Film Cameras

Priced from \$159.95

Write or Phone for Details

KB SYSTEMS, 10407 62nd PL. W.

Everett, WA 98204

(206) 355-8740

CANADA'S LARGEST LAB AND SOUND FULL SERVICE ORGANIZATION



BELLEVUE Pathe

MONTREAL
2000 Northcliffe Ave.
Montreal, Que. H4A 3K5
Tel. 514-484-1186

TORONTO
720 King St. West
Toronto, Ont. M5T 2T3
Tel. 416-364-3894

Pathe Sound Studios
121 St. Patrick St.
Toronto, Ont. M5T 1V3
Tel. 416-598-2521

*A DIVISION OF ASTRAL BELLEVUE PATHE LTD./LTEE

sions that I've been over there it didn't seem to be happening that way. I think now that if I were to be an operator, I would be slightly resentful of being left out in the cold and just being the man who sits behind the camera and turns the handles and told "pan ahead" or whatever and at the end says "OK" or "Let's do it again." I think the way I work with our operators is an excellent system. I think it should be common policy for all cinematographers.

QUESTION: Did you have any second unit work on this particular picture?

IBBETSON: Yes, we had an excellent second unit man, James Bordon, a very conscientious man and a man you can just send out. He knows exactly the style that you are working to and you know that if the conditions are right he will turn in a first class product, but if the conditions aren't right there will be some reason why it can't be shot. So there's no element of surprise. When the second unit rushes come up you know perfectly well it's going to match in with whatever is required and also, from the point of view of the producer, you have someone like Jimmy out there doing his best, even on his own just with a small crew. You know you're going to get a very, very good day's work from him and with first class results. Without people like Jimmy Bordon I don't think it's possible, in our climate over here (the weather changing about the way it does), to get these picture through on time without having a good back-up system like we have with these boys.

QUESTION: You were talking about using a gauze. Just how do you like using that?

IBBETSON: Well, as I said, we used the zoom lens for the whole shoot and I used the gauze to get this look that I wanted on the production, so the gauze was put on the back of the zoom lens and stayed there for the whole picture.

QUESTION: And what difference did that have compared with using it on the front of the lens?

IBBETSON: Well, I suppose basically there is very little difference—but by placing it on the rear of the lens one eliminates the danger of the gauze being photographed or registering, as could be the case if the gauze is on the front element and a lens aperture of f/11s or in excess, is being used—and particularly if the focal length of the zoom is operating at the wider end.



FILMING FACILITIES ASIAN FILMS

72, JANPATH, N. DELHI - 1

Cable: Moviphoto,
New Delhi (India);
Telephone: 320440

BEHIND-THE-LENS FILTER HOLDERS

For Angenieux lenses on all Arriflex 16, Eclair NPR and CM3 cameras, and for the 25-250 Angenieux for 35 mm - in kits with gel cutter, tweezers, spare gel container and other convenience features.

Ask for brochures

CUSTOM PHOTOGRAPHICS

P. O. Box 25007, Portland, Oregon 97225 • 503-292-5569

B&H FILMO 70 SERIES Professional 16mm Cameras

Sales • Service • Repair

An exclusive product of

ALAN GORDON ENTERPRISES, INC.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT



**CAMERA
ASSISTANCE**
35MM & 16MM



ECLAIR NPR XTAL
(213) 877-7979
David Waelder /
Cinematography

Black STUNTMAN T-Shirt

with white design silkscreen lettering

These 100% cotton shirts are great looking, extra comfortable & fun to wear.

\$9.00 each or SAVE! 2 for \$16.00

FREE "STUNTMAN" patch with each shirt ordered. Specify S, M, L, XL. Satisfaction Guaranteed.

STUNTMAN PRODUCTS DEPT. 120
8033 Sunset Blvd., Hollywood, CA 90046



DON'T LOSE YOUR HEAD!

We will renew your Fluid Head and overhaul it completely to be BETTER THAN NEW! Write or call us for our super fast service and low prices.

1994 N.E. 149th St.
No. Miami, FL 33181
(305) 949-9084, 9085

NCE
OF FLORIDA, INC.

FILMING IN AUSTRALIA or S/E ASIA

NEED:

- BRUTES
- HMI
- QUARTZ LIGHTING
- AC/DC GENERATORS

CONTACT:

JOHN CUMMINGS

LOCATION LIGHTING PTY. LTD.
SYDNEY, AUSTRALIA

TELEX: SECCO AA 25468

PHONE: (02) 913 7152

Ans/Serv:

427 4444

BUY — SELL — SWAP HERE

EQUIPMENT FOR SALE

CPR-16RP var. crystal motor, double & single crystal sound, super silent studio conversion, Barney, 4-400' mags, thru lens exp. meter, 3 chargers, batteries, changing bag, Angenieux 9.5-57, Angenieux 10-120, Angenieux 5.7 wide angle (new), EV mike, cables, earphones all packed in aluminum cases. New Miller fluid head tripod in case. Camera recently factory overhauled. BOLEX H16EL outfit with 2-400' mags, pickup motor, grip, shoulder pod, 2 batteries 0.45 Ah & 1.2 Ah, charger, Nikon tele 300mm, Switar 10mm, 5.5, super wide angle adapter in case. Package \$11,000. Call (203) 868-0717.

NAGRA 4.2L mono in mint condition, \$4,200. Mr. HILBERT, 4119 Russell, St. Louis, MO 63110.

ARRIFLEX 16S, Canon 12-120 zoom, 2 mags, torque, wild motors, pistol grip, battery, case, blimp with case. Package \$5,000. EDWARDS, 901 Chillicothe St., Portsmouth, OH 45662.

8-PLATE Steenbeck, 2 years old, good condition, foot pedal controls, equipped with mono and stereo heads. Asking \$23,000. Call B. COSEL (617) 254-4466.

GENERAL CAMERA SSIII, 2-400' mags, Pan Cinor 25-100mm lens with sidefinder, sync pulse motor, cables to Nagra, 1000D inverter, \$700. 100D inverter, \$65. Cinema Products amplifier for single system sound, \$450. THOMPSON (415) 237-1351.

16MM MOVIOILA upright. Superb condition, 3 sound heads, 1 large picture head, \$2,600. RON BOURKE, (206) 258-5334.

ARRIFLEX BL 1200' mag, case, Barney, like brand new, \$1,100. Kodak Pageant projector, \$295. Maier-Hancock 8-16mm hot splicer \$195. Uher 4,000L recorder \$850. (512) 478-2971.

COOKE ZOOM 9-50mm lens, used once. Mint condition. \$4,000 or best offer. Contact: OPUS FILMS (212) 879-1634.

16MM ARRI BL 12-120 Angenieux zoom, 2-400' mags, custom case, cables, \$7,000. Moviola 16mm, 2 sound heads, takeup arms, \$1,750. Nagra III, microphone, AC power supply \$2,500. Ampex 350, 1/4", make offer. Bell & Howell Model C 16mm printer, single light valve, sound head, RF and notch cuer, rectifier, air compressor, \$12,000. Set Kinoptik lenses Arri mount, 12.5, 18, 25, 50, 75, 100, 150, Macro 75, Cooke 17.5 and 25. JAMES A. LARSEN, P.O. Box 1023, Venice, CA 90291. (213) 821-2473.

CAMERAS: ARRI IIC hardfront, var. speed motor, Cinema Products xtal motor, constant speed motor, 2-400' mags, high hat, 2 cables, 1 case, \$6,000. Arri 16mm BL camera, 10 x 100 Zeiss lens, 2-400' mags, 2 power cables, 1 battery, 1 case, \$7,000. Aaton 16mm camera, 12 x 120 Angenieux, 2 x 400' mags, 2 Aaton on-board batteries, 2 camera power cables, 1 case, \$12,000. 2 Bell & Howell 1000' mags, \$250 ea. Mitchell rear screen process projector, all motors, cable, screen. Used on "Gone With the Wind." \$5,000. LENSES: 16mm Schneider Xenon, \$250. 32mm Cooke speed panchro, \$250. 25mm Schneider Xenon, \$250. 25mm Schneider Xenon, \$250. 12.5mm Cooke Kinetel, \$275. 32mm Cooke speed panchro, \$250. 40mm Cooke speed panchro, \$250. 10 x 12 BAF Angenieux zoom, \$800. 10 x 12 BAFB Angenieux zoom, \$800. 25 x 250 BAF Angenieux zoom, \$4,000. Arri bracket for 25 x 250, \$500. J4 zoom control complete, \$1,000. 18mm Cooke speed panchro II, \$500. 25mm Cooke speed panchro II, \$350. 10mm Schneider, \$500. 28mm Schneider, \$250. 50mm Schneider, \$250. CAMERA HEADS: 1 O'Connor 100 Mitchell base, \$1,600. 1 Worrall head, \$5,000. 1 Newall/Mitchell friction head, \$200. 1 Mitchell friction head, \$200. 1 O'Connor 50B fluid head, \$1,800.

SOUND EQUIPMENT: 1 AKG 451 mike, \$250. 1 AKG CK1 capsule, \$75. 1 AKG CK9 capsule, \$75. 1 AKG D110 Mike, \$50. 1 Mole Richardson boom, \$3,000. 1 Mole Richardson boom & perambulator, \$3,500. 1 Sennheiser 405 mike, \$400. 1 Sennheiser 805 mike, \$450. Phone CHRIS (416) 364-8417.

EQUIPMENT FOR SALE

ACL CAMERA, crystal motor, 400' mag, 4 batteries, 2 chargers, aluminum case \$3,000. Sonorex double band projector \$2,000. 15 x 300 Angenieux zoom lens, 2X extender \$1,500. Extra sharp 9.5-95 Angenieux lens \$1,500. B&H 302 projector \$350. TERRY PORTER, P.O. Box 1601, Boise, ID 83701. (208) 344-2244.

ECLAIR NPR, Beala xtal, Perfectone constant speed, 2 mags, 12-120 Angenieux, tripod, Spectra pro, batteries, filters, cases, many extras, and good quiet camera, \$7,000. (213) 851-7514.

SIX FAIRCHILD super-8 cartridge projectors, \$250 each. CP-16A & 9.5-95 package, \$2,700. Bolex reflex & 18-86, \$500. Bolex H-16 with lenses, \$190. Other lenses & more. CAMERA ONE, 1114 NE 75, Seattle, WA 98115. (206) 524-5326.

NEW 16MM metal film cans. 1200', 95'; 400', 75'; 100', 50'. Send \$3 check or money order for pre-paid samples. NOLTE IMPORT, P.O. Box 595, Billings, MT 59103. Phone (406) 259-3057.

16MM MINICAM (2) with C-Mount lens plate, batteries, charger, boresight, 10mm, 17mm, 25mm Switar lenses, (7) mags, all \$1,000. Will separate. (213) 992-4728.

16MM EXTACHROME, 7241-100' \$6.95; 400' \$25.95. 7240 magnetic, 100', \$7.95; 10 rolls \$68.50. 7250, 7252 or 7242, 100' \$9.95; 400' \$38.50. 7247, 100' \$9.98; 400' \$47.95. 35mm 5241, 100' \$27.50; 1000' \$245. 35mm leader, 1000' white \$45; black \$75. 16mm black leader, 1000' \$48.50. WE BUY/SELL 5247/Fuji. MOVIOILA, 16mm magnetic/optical, reconditioned, \$2,350. MILLIKEN 16mm CAMERA, DBM 55, 0-500 fps, pin registration, 400' C-mount, reconditioned \$2,385. PHOTO WAREHOUSE, Box 17278, Los Angeles, CA 90017 (213) 484-0502.

LLOYD'S USED MITCHELL CAMERAS 16-35-70 and other offerings: Mitchell 16 professional camera outfit, #783 like new, 5 mags, 9 Cooke Kinetel lenses, 3 motors, cases. Sold only as complete outfit. Mitchell 16 reflex outfit, 3 mags, 2 motors, cases, rare outfit. Mitchell 35 reflex/camera converted by Fries. Mitchell 70mm camera w/mag mod 70Da. Extra 65mm mags, bi-pack, 65 mag, 1,000' capacity. B&H 2709 camera w/shuttle movement. Eclair CM-3 camera, blimp, extra 16-35 mags. Mitchell Mark II top load camera outfit w/5 super Baltar lenses, mags, 3 motors, a complete outfit. Mitchell Mark II blimp in case, like new. Arriflex 35mm Techniscope outfit. Plus other weekly arrivals. Write us your needs for new and like new cameras. LLOYD'S CAMERA EXCHANGE, 1612 No. Cahuenga Blvd., Hollywood, CA 90028. (213) 467-7956, 467-7180.

35MM HS camera w/110V 1PH 60cy mtr., Variac, & control unit, \$3,000. Ampex FR 1200 data recorder \$3,000. USA & NATO only. FOB Oxnard, CA. DISCOVERY FILMS, Box 113, Port Hueneme, CA 93041.

CP-16B, unused, 9.5-57 Angenieux, 2 mags, 2 batteries, chargers, case. \$10,000. HANS (212) 628-6676.

16MM MOVIOILA M77 flatbed. 6-plate, optical & mag sound. Excellent condition \$8,500. (213) 393-8337.

FILM RACKS: Three 35mm racks, each 120 spaces, 7' x 3' x 1', cheapo construction but very usable, knocked down, as is, used. \$30 each. Can arrange delivery Hollywood. (714) 884-9345 evenings.

NAGRA III, ATN, case, superb condition, \$1,350. Beaulieu R16, 12-120 auto-iris Angenieux, 200' mag, power grip, charger, case, like new \$1,450. (703) 354-5126.

ANGENIEUX (35mm) 25-250, f.3.2, Arri mount, mint condition, \$6,350. PETER MARTIN, (415) 435-4491, 332-5297.

NPR CLEAN, overhauled, documents, 2 mags, xtal motor, 12-120 Angenieux, A&J case \$7,000. (213) 466-8511.

EQUIPMENT FOR SALE

ECLAIR NPR 12-120 Angenieux Perfectone motor, Cine 60 battery belt, 2 mags, pistol grip, cases, raincoat, Barney, excellent condition \$7,500. (516) 754-1687.

LIGHTING EQUIPMENT: 1 125 KVA mobile generator, \$20,000. 3 225 AMP Brutes \$4,000 ea. 2 4K Kobold HMIs \$4,300 ea. 2 2.5K Kobold HMIs \$3,400 ea. 4 575K HMIs \$1,700 ea. 4 4K Arri HMIs \$7,000 ea. 2 575 Arri HMIs \$3,300 ea. 1 1200 LTM HMI \$2,500. 5 5K Mole Richardson seniors \$500 ea. 4 4K Mole Richardson softlights \$800 ea. 3 170 AMP Brutes, as is \$500 ea. 2 90 AMP Brutes, as is \$200 ea. 1 wind-up stand, \$250. 18 Mighty Moles with dichroics, \$350 ea. 12 Mole Juniors \$400 ea. 2 IANIRO 10 10K \$1,200 ea. MISCELLANEOUS: 1 McAllister crab dolly, \$2,500. Phone CHRIS (416) 364-8417.

MAURER #10 recorder, 1200' mag, #60 amplifier \$6,500. PERDUE, Box 13127, Roanoke, VA 24031 (703) 366-0295.

CP-16A PACKAGE COMPLETE \$3,000
ANGENIEUX 12-120 lens, sound system, 400' Lexan mags, batteries, charger, & more. JOHN (617) 498-3149 or (202) 338-4499, excellent condition.

CP-16R body, viewfinder, 4 mags, batteries, chargers, mint condition, \$5,500 or best offer. IMAGE RESOURCES, 53 Center Road, Easton, CT 06612 (203) 261-0615.

MAGNASYNC 2200/Erase head \$75. B&H JAN projector \$450. Angenieux 12-120 & Auricon \$1,400. Auricon amplifier recorder \$350. Or will trade for Magnasync dubbers and/or whatever. Call (313) 261-6880 or 647-7669.

NAGRA III, Senn 815 mic. Good condition \$2,800. (213) 466-8511.

BELL & HOWELL JA printer, like new, \$1,400. Reevesound lab 16 photo sound recorder w/ Maurer F galvanometer \$6,500. Reevesound magnetic recorder reproducer \$2,000. B&H 6170E tape puncher & keyboard w/RF cuer. HOWARD, 4623 High Point Rd., Greensboro, NC 27407 (919) 292-8260 or 288-4816.

35 ARRI HI-SPEED, 28, 32, 50, 75; 4-400'; 25-250 Ang.; J-4; filters; constant; variable; crystal; Italian & Cine 60 flat bases; 3 bat.; Mitchell tripods; B&S rolling tripod dolly. 2 16mm Gordon gun cameras; 10mm Switar w/bore scope. All like new. In A&J cases. Will separate. Call or write for prices. CP-16 R-P, bloop light & sync pulse; Ang. finder; 12-120 Ang.; 4 mags; 3 batts; filters; Barney; cases; much more. Like new \$7,500. BEAUPEASE, 5841 Nagle Ave., Van Nuys, CA 91401. (213) 994-1055.

35MM x 400' B&H Bipack mag \$450. Telephone (808) 536-0571.

PHOTOSONICS Actionmaster, 400' mag, Frezzolini, Angenieux viewfinder, Arriflex bayonet, split reels, accessories, Halliburton, \$12,200. CENTURY 6mm lens and sea research underwater housing for Photosonics, Sekonic, Frezzolini, Tele-dyne case, \$2,250. Remote radio control for Photosonics \$200. Bauer P-6 optical/magnetic projector \$800. 3M VR-210 videocassette 3/4" recorder \$1,000. Minolta spot meter \$250. Century 230mm \$490. Century 385mm \$340. Century 650mm \$360. Custom lens brace \$250. Halliburton 121-110 case \$125. Nikkor 200mm \$200. Nikkor 105mm \$250. All absolutely excellent condition. WANTED: Arri S or M w/single frame motor & intervalometer for time lapse use. MARTY STOUFER PRODUCTIONS (303) 925-5536.

35MM ACME & 2709 movements. 16/35mm Acme computerized optical printer. (213) 463-2345.

FOR SALE: McAllister camera dollies, please call or write for details on these or other dollies to CHINDIT EQUIPMENT CO., 620 N. Spaulding Ave., LA 90036. (213) 852-9780.

NAGRA IV L, leather case, xtal spd varier, Senn 815, hanger, clean, bargain, \$3,500. (213) 466-8511.

RATES: Ads set in lightface type 60¢ per word; minimum per ad \$7.50. Text set in bold face or capital letters (except 1st word and advertiser's name) 80¢ per word. Additional \$3.00 service charge on blind ads. Remittance to cover cost MUST accompany copy. Send to Classified Advertising, American Cinematographer, P.O. Box 2230, Hollywood, CA 90028. Deadline for copy is 1st of the month preceding date of issue. Subject matter limited to items and services pertaining to filmmaking, cinematography, video.

EQUIPMENT FOR SALE

ANAMORPHIC LENS for 35mm motion picture camera. Fit on front of regular lenses. 2 to 1. Very sharp \$900. (213) 851-3124 or 769-6511.

ECLAIR ACL (French), 2 new model 400' mags, CP conversion motor, 12-120 Angenieux, 2 Cine 60 12v belt batteries, custom-made barney, aluminum Halliburton carrying case. Package for \$14,000 (US). Call BILL CASEY in Montreal (514) 487-3431.

ARRIFLEX 16SR CAMERA PACKAGE complete with 2-400' mags, 2 on-board batteries, charger, 10 to 150 Angenieux zoom lens, custom cases, etc. All equipment in superb condition. Call for price. PRODUCTION SERVICES UNLIMITED (213) 840-0155, leave message.

FOR SALE: Arri, 35BL II complete lenses, all accessories with special soundproofed housings! "Quietest 35BL in town." 4-1000' mags, 2-400' mags, Angenieux 20-120, 25-250mm Zeiss primes. 16, 24, 32, 50, 85mm. MARIO TOSI, ASC (213) 656-4240. RONALD VIDOR, SOC (213) 766-6868.

CECO ANIMATION motor Type 375, Model M with control box, cables & case. Mitchell or B&H 2709. New, never used. Price: \$3,350. Mitchell super speed lenses, 28mm T1.8, 35mm T1.3, 55mm T1.1, 85mm T1.7, filters & case. BNCr mounts, new condition \$4,500. Eclair ACL 16mm, CP xtal motor conversion, 2 ea 200' mags, finder, handle, battery, 12-120mm Angenieux CA-1 mount. Fully serviced Saba \$7,300. Arriflex 16mm M, 2 ea 400' mags, 8VDC const speed mtr, 12-120mm Ang & case. Reconditioned \$4,300. Nagra recorder IV-BL, 7 1/2 IPS speed, preamps, 60Hz crystal, leather case, \$3,175. Excellent condition, little use. Angenieux, 25-250, Arri mount, filter ring & shade. Lens fully serviced & reconditioned, \$5,750. Kodak 16mm Pageant projector w/ Palmer PMA magnetic film transport, interlock cable. Like new, \$1,500. Bolex 16mm EBM, crystal motor, battery, charger, 1 1/2 years old, \$1,850. Lens 12-120 Angenieux C mount for Bolex \$1,000. **BIRNS & SAWYER, 1026 NO. HIGHLAND, HOLLYWOOD, CA 90038. BILL SUTPHIN (213) 466-8211.**

ARRI S, mint, 12-120 Angenieux with zoom motor, 1 mag, T.M., 300mm Century, 5.7mm Kinoptic, batts, case, \$3,750. (404) 475-2400.

AQL WITH 2-400' mags and Halliburton, one year warranty, \$8,000/offer. Stellavox SP8 with Halliburton, mint, \$4,000. 9.5-57 in CA-1, mint, \$3,000. SCOTT (515) 295-3962.

FREZZOLINI crystal sync 16mm SS III with 9.5-95 Angenieux, 400' mags, 2 batteries & chargers, sturdy shipping case. Very good condition. Included: fluid head tripod with new legs. All for \$3,500. (212) 586-8782.

FOR SALE: NPR, 2 mags, 9.5 x 10, Perfectone, xtal, anvil cases, Arri S, 1 mag, 12 x 10 & 12 x 20 Angenieux, support, filters, 8mm Zeiss, Moviola M-77 hollow prism. Many other accessories too. KXLI-TV (612) 338-7550.

BOLEX REX V, display model on camera shop. Excellent condition, with 25mm Kern-Switar lens, 75mm Schneider-Kreuznach lens and 16mm Schneider-Kreuznach lens, \$1,150. 10 day inspection guarantee. J.M. MEDINA, P.O. Box 16268, Denver, CO 80216. (303) 534-9086.

KODAK 7239 mag, stripe daylight film, guaranteed fresh, freezer stored. 40-100' rolls. \$7/roll. TERRY PORTER, (208) 344-2244.

AUDIO RMS & wireless microphones, (2) \$1,000 ea. Schoeps Hypercardioid microphone, \$275. Schoeps MK-8 bi-directional capsule, \$350. Rogers LS 3/5A mini-monitor speakers, \$350 pair. Crown D-75 amplifier, \$250. All in excellent condition. HADDAM AUDIO/VIDEO, 376 Broome St., New York, NY 10013. (212) 226-2429.

CINEMONTA 8-PLATE, 16mm editing table for sale or lease. 2 picture, 3 sound heads and optical sound, comparable to Steenbeck. Low maintenance. New condition, \$18,500. (213) 396-9159.

MINT CONDITION! Eclair ACL with crystal motor, 2-400' mags and Angenieux 9.5-57mm along with 39 other major pieces of camera and lighting gear. Priced right to sell. (201) 786-6617 after 5 p.m.

ARRI 16BL, 12-120mm Angenieux, matte box, 2 mags, remote switch, battery belt, cables, Miller pro tripod, Arri case, \$6,500. Nagra 4.2L, QPM-1-200's, QSLI, QFM-60, ATN-2, speed varier, leather case, \$3,500. Moviola, rewinds, 4 gang sync, sound reader, 2 speakers. Moviscope viewer, 2 Maier Hancock hot splicers, guillotine 2-T \$1,000. JOHN TEICHMANN, (314) 367-4445.

EQUIPMENT FOR SALE

VISTAVISION CAMERA. Contact Kirk Wooster. VIDEO ATLANTA, INC. 445 Bishop St., NW, Atlanta, GA (404) 874-2252.

SUPPLIES

BLACK LEADER, 16mm, fresh stock processed to 4.0+, guaranteed \$.05/ft, min. order 2000 ft. Complete lab service and supplies. 16mm & Super-8. LEO DINER FILMS INC., 350 Golden Gate Ave., San Francisco, 94102 (415) 775-3664.

SERVICES AVAILABLE

INCOME TAX SPECIALIST to Cinematographers. PAUL MILLER, 26 Court St. Brooklyn, NY 11242. By mail or appt. (212) 339-0447.

QUALITY CAMERA & lens repair. Arri Cinema Products, Mitchell, Auricon, Bell & Howell, NPR, Angenieux, Canon, Fujinon. KRUEGER'S CAMERA REPAIR, Rt. #2, Box 13, Ennis, TX 75119. (214) 875-5566.

FILMING IN JAPAN

WE CAN PROVIDE ALL PROFESSIONAL FACILITIES YOU REQUIRE. FRYMAN PRODUCTIONS/EASTERN ENTERPRISES, P.O. BOX 62, OGIKUBO, TOKYO, JAPAN 167. TLX: J25694. Tel: 397-2860.

QUALITY CAMERA SERVICE

Complete repair and machine shop, parts department, and top experienced technicians are available at Birns & Sawyer, Inc. to service your camera, lenses, tripods, and related equipment. Send in your equipment for an estimate to our Service Dept. Call (213) 466-8211, Peter Anway. BIRNS & SAWYER, INC., 1026 No. Highland Ave., Hollywood CA 90038.

O'DOHERTY TECHNOLOGY A REPUTATION WELL EARNED.

Technical expertise for the professional cinematographer. Nobody gets those sync cameras quicker. Buyers and sellers of used equipment. Authorized Eclair and Arriflex dealers. Super 16 specialists. O'DOHERTY, 1303 Main St., Port Jefferson, L.I. NY 11777. (516) 331-1395.

HOLLYWOOD EDITING equipment and room rentals. Also complete editorial services. CRAWFORD EDITORIAL (213) 463-7939.

HISTORIAN/WRITER/Researcher entertaining employment offers from Hollywood area film equipment firms, areas of technical, advertising, historical writing. Author of "Golden Anniversary for B&H Cameras," "The On-Going Mitchell Story," "The Mitchell Camera: the Machine and its Makers" (Feb 1982 SMPTE Journal), etc. (Member SMPTE Historical Committee, PMPEA, BKSTS, International Photographers 659). L. ROBERTS, Box 242, Portland, OR 97207-0242.

FILMMAKER with video experience. Camera, film and video. Editing, film and video. Write No. 1855, AMERICAN CINEMATOGRAPHER.

16MM EDITING ROOMS. LOWEST RATES. Monthly. Fully equipped, flatbed or Moviola (213) 994-2098.

SITUATIONS AVAILABLE

HELP WANTED TECHNICAL PERSONNEL

IDI has openings in Miami and Atlanta for camera/optical, electronic technicians, rental sales personnel, super secretaries. 16/35mm or video experience ESSENTIAL. Very interesting growth potential for career oriented, energetic nonsmoker. Resume to IMAGE DEVICES, 1825 NE 149 St., Miami, FL 33181.

WANTED

RAW FILM STOCK & VIDEO TAPES. Will consider all types. Top cash. RAFIK, 814 Broadway, NY 10003. (212) 475-7884 collect.

JK 103 OPTICAL printer wanted. MARILLE HAHNE (312) 929-0739.

Birns & Sawyer, Inc. will buy your equipment or sell it on consignment. Thirty years of dependable service to industry professionals. You can bank on us year in and year out. Come in or call Bill Sutphin for a quote. Birns & Sawyer, Inc., 1026 N. Highland, Hollywood, CA 90038. (213) 466-8211.

NEED COMPLETE (Used) 35/16 color film lab equipment for ASIA. Installation and setup services for one year required. Interested parties call PAUL YANG & ASSOCIATES, Pasadena, CA (213) 681-0600.

WANTED

WESTERN ELECTRIC SOUND EQUIPMENT (working or not) Amps, tubes, speakers, horns, drivers, microphones, mixers, others. DAVID YO, P.O. Box 832, Monterey Park, CA 91754. (213) 576-2642.

OLD MICROPHONES. Pre 1940. For my microphone museum. Also mic related items. Write BOB PAQUETTE, 107 East National Ave., Milwaukee, WI 53204.

WE NEED MITCHELL 16-35 cameras of all kinds. Our export market permits us to pay higher prices for clean cameras. Cash or certified check. Write or call! LLOYD'S CAMERA EXCHANGE, INC., 1612 N. Cahuenga Blvd., Hollywood, CA 90028. (213) 467-7956.

WANTED: FRESNEL LAMPS (inkies, 1Ks or 2Ks) and C stands. TOM DAVENPORT, Delaplane, VA 22025. (703) 592-3701.

HIGH-SPEED Infra-red current film stock 16mm and 35mm. Small quantity for research. DARRELL RANDOM, Box 1546, GCS, New York 10163.

WANTED: Arri 2-C package including body, motors, mags, flat base, 25-250 zoom, lenses, etc. Call (415) 282-1300 days for WILL.

UNIVERSAL MATTE box for Arri S for 3 x 3 filters. STUART (212) 677-9233.

WANTED: 35MM automatic developing unit that can handle 400 ft or 1000 ft rolls. Submit information and asking price to APPLIED GEOPHYSICS, INC., 675 South 400 East, Salt Lake City, UT 84111.

WANTED: Ang. 9.5-57 zoom. (415) 626-7500.

BEAUTIFUL FILM FOR SALE

Now you can create beautiful motion picture sequences from film that has won awards throughout the world. Available for purchase for your film or television commercial is footage from the library of MacGillivray Freeman Films, the photographers of "Five Summer Stores," "Jonathan Livingston Seagull," "Skyriders," "Big Wednesday," and the American scenes in Stanley Kubrick's new film, "The Shining." Our special categories of incredible film images include: AERIAL SCENICS AIRPLANES SURFING WAVES CITIES BY AIR BALLOONS SAILING OCEAN CLOUDS & SUNSETS SEAGULLS CLIMBING SKIING NATIONAL PARKS HANG GLIDING SOARING & MORE

Write or call us for additional information and our color poster catalogue. **MACGILLIVRAY-FREEMAN FILMS** Producers of fine feature films, television commercials, and corporate image films. Box 205, South Laguna, CA 92677 (714) 494-1055

MOVING?

PLEASE NOTIFY US
6 WEEKS IN ADVANCE

Miss/Mrs./Mr.

Name (please print)

New Address

Apt. No.

City

State

Zip

MAIL TO
AMERICAN
CINEMATOGRAPHER
P.O. Box 2230
Hollywood, Ca.
90028

ATTACH LABEL HERE for address change or inquiry. If you are receiving duplicate copies of AMERICAN CINEMATOGRAPHER, please send both labels. If moving, list new address above.



You can be the first on your planet to have the new 6000W

Strand Century/Ianiro HMI

Always the leader, Strand Century now brings you the new compact 6000W HMI, the logical step up in brilliance from the famous Ianiro 575W, 1200W, 2500W and 4000W HMI's.



Strand Century/Ianiro HMI's save the day, just in time to illuminate large areas — or balance strong sunlight. These high intensity daylight sources are lightweight and indispensable for location filming and outdoor television applications. Ianiro HMI's light the way from outwest to outerspace. For more information, fill in the Info-req.

STRAND CENTURY

A Subsidiary of Rank Industries America Inc.

20 Bushes Lane, Elmwood Park, New Jersey 07407, Tel: (201) 791-7000 (212) 564-6910, Telex: 130322
5432 West 102nd Street, Los Angeles, California 90045, Tel: (213) 776-4600, Telex: 653508
6520 Northam Drive, Mississauga, Ontario, Canada L4V 1H9, Tel: (416) 677-7130, Telex: 06968646

Photo location courtesy of The Burbank Studios.

Info-req

HMI

Mail to LA Address

Name AC2/82

Position

Company

Street

City State Zip

Aäton lets you forget that Nature never forgives.

Guy (rhymes with "oui") Genin, Zellan's principal Service Engineer, shows how the 16mm Aäton LTR outwits a cruel world.

"Ill-mannered Nature can be tamed. When you shoot with a well-designed 16mm camera. I first learned this during bitter Alpine winters at the Aäton factory in Grenoble. The city where I was born.

Now, at Zellan in America, I maintain the cameras I helped build—16mm Aätons man-handled as roughly in the studio as they are in the field. Rented cameras treated as casually as rented cars. Jolted by frigid temperatures one day. Blistering climates, the next.

The Aäton shrugs off those abuses. Day after day. Because it has the kind of rugged strength Nature builds into her own products. Stronger because it's smarter, the Aäton overcomes environment with the simplicity and perfection of enduring design. Not the cumbersome armor-plating used by other manufacturers. A poor excuse for protection in today's modern

world...where you needn't sacrifice agility for strength.

We start by precisely tooling and joining the intricate Aäton parts. Then, all of these critical optics and high-technology mechanisms are insulated safely within a separate housing. Entirely protected from the exterior shell. And the outside world.

The world doesn't have a forgiving nature. But forget it. Buy or rent an Aäton. And give it your worst. You'll still be able to give your job the best. Because it's my job to make sure every Aäton is stronger than the cruelty of Nature. Or the carelessness of human nature.

Can Zellan and Aäton really do all this for you? To find out, give me a call. Je m'appelle Guy. And yes, oui can."

Zellan

Enterprises Ltd.

Zellan Enterprises, Ltd.
16mm Product Technology
250 West 57th Street
New York, NY 10019
212/245-1598

